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TEACHER-PUPIL INTERACTION IN ELEMENTARY URBAN SCHOOLS.

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AN ATTEMPT WAS MADE TO DESCRIBE THE VARIOUS ELEMENTS OF THE ELEMENTARY CLASSROOM ENVIRONMENT (GRADES K-6) WHICH AFFECT INTERACTIONS BETWEEN TEACHERS AND THEIR PUPILS. MEASUREMENTS OF INTERACTION OCCURRENCES WERE GATHERED WITH RESPECT TO (1) CLASSROOM ACTIVITIES, (2) TEACHING STYLES AND PUPIL RESPONSES, (3) SENSORY EMPHASES, AND (4) USES OF INSTRUCTIONAL MATERIALS AND THE EMOTIONAL CLIMATE OF THE CLASSROOM, USING VIDEO-TAPED OBSERVATIONS OF REGULAR CLASS SESSIONS. THE 96 CLASSROOMS USED FOR THESE OBSERVATIONS WERE SELECTED TO PROVIDE RELATIVELY EVEN DISTRIBUTION AMONG THE FOLLOWING VARIABLES--(1) MALE AND FEMALE TEACHERS, (2) CAUCASIAN AND NEGRO TEACHERS, (3) PREDOMINANTLY NEGRO AND CAUCASIAN PUPIL SAMPLES, (4) SUCH SCHOOL TYPES AS SUBURBAN, MIDCITY, AND INNER CITY, (5) SUCH CLASSROOM ORGANIZATIONAL PLANS AS SELF-CONTAINED, SUBJECT-MATTER, AND SPECIAL CLASSES, (6) REPRESENTATIVE SUBJECT-MATTER AREAS, AND (7) REPRESENTATIVE PUPIL SAMPLING IN ABILITY GROUPINGS, INCLUDING SOME CONSIDERATION FOR PHYSICAL AND EMOTIONAL HANDICAPS. FINDINGS INDICATED THAT THE VARIABLE OF CLASSROOM ORGANIZATION SIGNIFICANTLY AFFECTED TEACHER INTERACTIONS WITH PUPILS. RACIAL AND SEX DIFFERENCES, AS WELL AS SAMPLE GROUPINGS INTO SOCIOECONOMIC-GEOGRAPHICAL CLASSIFICATIONS, DID NOT APPEAR TO HAVE SIGNIFICANT INFLUENCE ON THESE INTERACTIONS. IT WAS SUGGESTED THAT IN FUTURE STUDIES IN THIS FIELD ATTENTION BE FOCUSED PRIMARILY ON ORGANIZATIONAL PLANS, IMPLEMENTATION OF "QUALITY TEACHING," AND TEACHER PREPARATION PROGRAMS. (JH)

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# TEACHER- PUPIL INTERACTION IN ELEMENTARY URBAN SCHOOLS

**Cooperative Research Project No. 2780**

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# CHAPTER I

## INTRODUCTION

Increasingly sophisticated methodology is currently being applied to the problem of obtaining objective data on the interactions of teachers and pupils in actual classroom situations. Since teacher-preparation institutions, in particular, are responsible for developing potentially good teachers, it becomes especially important to identify characteristics of effective teachers and responses of pupils to these actions and to obtain such samples in "retrievable" form for teacher preparation uses.

### Statement of the Problem

This assessment will describe procedures and results of video taped observations, recordings, and categorizations of a representative sample of men and women, Caucasian and Negro, elementary school in-service (contract) teachers and their pupil population samples in representative schools of an urban area and will deal with events that may 'normally be expected to occur' in these classrooms.

Objectives:

The following objectives are listed as guides to the study:

1. to obtain, through video taped observational techniques, samples of teacher-pupil-pupil interactions in 96 different elementary school classrooms of an urban area;
2. to analyze such interactions for significant differences according to racial groups, sex of the teacher, organizational plans of classrooms, geographical locations of schools and special aid programs (i.e., Great Cities School Improvement Program);
3. to assess the consistency of observed interactions based on educationally sound and desirable practices;
4. to form generalized concepts of teacher-pupil interaction for purposes of teacher preparation; and
5. to obtain representative video tapes of teaching-learning situations in retrievable form for teacher preparation use and for further analysis.

Such quantitative measures of a socio-economic-ethnic nature may yield descriptive evidence of performances and behaviors characterizing teachers with pupils of similar/dissimilar races; performances of pupils whose race is similar/dissimilar to that of their teachers; and sex differences among teachers with similar/dissimilar races of pupil samples in varying school situations.

Events of interaction were classified into more-or-less homogeneous categories, some of which were identified in a previous factor analysis[1] and others based on a priori judgments as follows:

---

[1] Virginia B. Morrison, "The Relationship of Student Teacher Performance to Ratings by Their Supervisors and Pupils," The Inter-Institutional Seminar in Child Development, Collected Papers. The Edison Institute, Dearborn, Michigan, 1962.

1. Teacher-pupil leadership, participation and assistance
2. Teacher-pupil mobility and restriction
3. Teacher-pupil sensory emphasis
4. Teacher teaching styles and pupil responses to teaching style
   a. Lecture-Question-Answer- Use of Text or Workbook-Recitation
   b. Problem solving- Interpretation
   c. Demonstration- Manipulation-Illustration
   d. Supplemental-Enriched-Individualized
5. Teacher-pupil uses of instructional materials
6. Emotional climate of the classroom (Expressive behaviors)
   a. Teacher-pupil positive and negative verbal behaviors
   b. Teacher-pupil positive and negative physical behaviors
   c. Teacher-pupil positive and negative covert behaviors
   d. Teacher punitive- pupil disruptive behaviors [26]

## Related Research

There is a lack of research in the particularized area of racial and sex combinations of teacher and pupil groups. Much is known about the achievements, the aspirations, the values and characteristics of specified sub-cultural groups but little direct evidence has been obtained regarding teacher and pupil behaviors in representative ethnic-socio-economic situations in urban areas and none has been found of video tapes of actual teaching situations with in-service teachers.

Recent assessments of teaching *effectiveness and teacher-pupil* interactions have shifted from subjective ratings and judgments to more objective techniques of observation of classroom interactions. Studies by Medley and Mitzel[22] in defining, identifying and objectively recording classroom behaviors, as well as those of Dixon and Morse [7], Morrison [26], Flanders [9], Withall [35], Anderson and Associates [3], Lippitt and White [19], B. Othanel Smith [32,33], Dixon and Morrison [8], and others are particularly pertinent to this study. "Without investigation into the nature of teaching effectiveness, it is impossible to either identify or recruit those born with this talent, or to make successful teachers out of people born without it."[23]

Miriam L. Goldberg [11] specifies many questions for the urban areas as to the effects of the schools on fostering or depressing pupil growth in relation to aspects of teacher personality characteristics, teaching styles, uses of materials and ethnic relationships. Riesman [30] and the Ausubels [4] present compelling reasons for continuing investigations of classroom practices with changing pupil populations. Kenneth B. Clark states that "...attempts to determine the specific role of a particular school on performance of the children in that school must obtain data on the general attitude of teachers in that school towards their children, particularly if there is a marked class discrepancy between teachers and students."[5] Allison Davis [6] stresses the importance of ascertaining the attitudinal patterns which the teacher communicates to children and how these block or facilitate pupil performance. Kornberg [17] suggests that proper questions deal with what kind of classroom(s), what activities, uses of materials and 'strategies' will foster learning.

Much has been written about the 'middle class values' of teachers, as well as about Negroes who have risen to a higher status and who, it is reported, "... no longer feel a sense of responsibility toward members of their group."[12], but no demonstrable evidence has been found in the literature to support some of the current opinions regarding teacher selection and placement procedures in metropolitan areas. Goldberg asks, "Do Negro teachers work more effectively with children from their respective groups than do white teachers with Negro children? What aspects of pupil performance are related to the attitudes of teachers of either races?" [13] Riesman[30] implies that the net yield of teacher characteristics and classroom atmosphere and/or procedures as related to pupil success or failure needs serious consideration. Passow [31] states, "Study may yield some leads to methods, involvement, and emphasis on different [activities] as they affect pupil attainment and drive."[28]

The affective role of the classroom teacher in the education of children is a recurring theme in the literature. Whatever alterations are made in the organization, materials and/or services of the schools, it is thought the most important knowledge necessary is that regarding the teacher and her pupils. Programs for preparing and placing teachers must be based on realities of interaction and situation. Studies reporting affective behavior of teachers and children have only infrequently been coupled with those involving investigation of types and varieties of on-going classroom activities, uses of materials and teaching styles; those of Medley [22], Perkins [29] and Morrison [26].

In a report of the Utah assessment of teaching effectiveness, Marie Hughes writes of Barr's comment ['teaching effectiveness may be essentially a relationship between teachers and pupils'] that such relationships "... could be described from data of classroom proceedings focused on interaction of teacher and student." [16] Flanders proposes "research on the teacher's influence that someday may contribute to a theory of classroom instruction broader in scope than a theory of learning which would involve concepts describing both the pupils' and teachers' behaviors."[10]

Recent studies and summaries [20] in the area of teacher-pupil interaction emphasize that " [the] generation of interpersonal feeling between teacher and pupil is the teaching factor that lies at the core of the classroom tone."[18] Robert Havighurst, in an article entitled "Urban Development and the Educational System", summarizes these studies by stating, " the conclusion appears inescapable that a kind of 'academic climate' existed in each school that affected the attitudes of the student toward study and affected their educational aspirations."[15]

Locally, the Detroit Great Cities School Improvement Program, as described by Dr. Carl Marburger, has as one of its major approaches work with teachers in striving to modify the perceptions of teachers through involvement of each school staff with its unique situation and population. Workshops, organizational and curriculum changes, and experimentation with teaching materials are employed. Although Marburger reports, "Assuming the requisite skills in teaching the basic materials, the teacher's attitude is the most crucial factor" and "teacher expectations have surprising impact on pupil achievement" [21] there is little evidence, in this particular project, that efforts are being made to evaluate the operation of these 'teacher attitudes' as they relate to actual classroom practice with youngsters, especially with similar and dissimilar racial samples. Marburger writes, " We have only subjective evidence from two values questionnaires, framed by the teachers, as measurement instruments."[21] Thus, for this urban area, more objective assessments of teacher interaction with children, and the reactions of pupils to these observable expressions, are worthy of description.

Theoretical basis for the study:

"We must first identify and describe...various dimensions and variables of teaching behavior before we can think realistically about concepts and principles relevant to its control" is a major premise in the studies of teaching by B. Othanel Smith [32,33].

No general theory of classroom teaching can be formulated until ways of objectively recording and measuring teachers' performances and behaviors have been established and the relationship of these actions to the performances and behaviors of pupils have been quantified in order to extract those most normally and frequently occurring. Medley and Mitzel stipulate " that in order to learn anything about classroom behavior it is necessary to study behavior in the classroom. If behavior takes place in the classroom, it is therefore capable of being seen [and] or heard by a properly trained observer. We can measure certain effects of behavior and see which of these behaviors are followed by effects in which we are interested."[23]

Medley's technique for measuring a teacher's behavior in the classroom embodies a check list of behaviors plus a scoring system by which several correlated items form a composite scale that is more reliable and interpretable than any individual item. With Medley's permission, the author has revised and amplified items of the original Observational Schedule and Record (the OScAR) and formulated revised scoring keys [based on factor analysis] into the Revised Observer Schedule and Record Form II (ROScAR II). Video taped observations, with cameras mounted in the classroom, provided specimens of classroom interactions for scoring with this instrument without an outside observer being present in the room.

The emphasis of this study is specifically upon relationships of teacher-pupil interactions occurring in these teacher-pupil population samples rather than on any measure of "competency" or intent of these subjects.

Assumptions of the study:

1. There is a continuity to behavior. What one observes today in an individual has had a history; his behavior of the moment is not a mere passing whim. It is possible to speak of the prognosis of behavior in the sense that tendencies found today will persist under the same conditions and will retain characteristics even under changed circumstances.[1]
2. Persons within a given culture area tend to develop similar modes of response in spite of their individual and unique differences.[2]
3. Selected items from a common cultural situation, grouped together in terms of relatedness or similarity, form a basis from

which some aspects of individual response or action may be measured. Presumably occurrences ranging from zero to n-- amounts permit comparison between individuals.

4. Any study of individuals will not employ the single event situation of behavior but the recurrent reactions through periods of time through which central modes of response can be identified.

   a. The time-sample technique, as used by Olson [27], is to use as a unit of measurement the occurrence or non-occurrence of an item within a short period "applicable to a wide range of problems such as leadership and comparative studies of methods of teaching and classroom discipline." Since the practical considerations of continuous observation reduces its value, the time sample used is to obtain a descriptive picture. According to Allport, "...many different adaptive acts distributed in time show repeatedly the same telic and expressive character."[2]

5. Many writers stress that when a measure is designed to discover other than intellectual characteristics, it must emphasize the presence or absence of reactions rather than intellectual skill. Since teachers and pupils are _doing_, rather than being _ready to do_ and their relationships are expressed in language, feeling and action, the situations must be real, varied and without judgment in the recording of the behavior. "We must study and measure the [individual's] make-up in terms of situations."[33] Thus, spontaneous behavior in situations reveals tendencies of the performer which are not readily accessible by other means.

6. Aspects of teacher and pupil interaction can be identified, through definition and observation, and measured quantitatively, by occurrence and frequency, without bias or judgment on the part of the recorder.

A pilot study, conducted by this author, with a sample of 28 male and 28 female student teachers of the two races, revealed significant differences between white and Negro student population samples. The present study would extend such research with a larger, more representative sample of certified, contract teachers recommended by their principals as teachers of "established competence".

# CHAPTER II

## PROCEDURES OF THE STUDY

Video taped recordings of 96 inservice (contract) teachers and the pupils of their classrooms in 96 different elementary school classroom were obtained through the cooperation of the Instructional Research Office of the Detroit Public School system.

### Criteria

Criteria for the selection of teachers were as follows:

1. the recommendation of "established competence"[1] by their principals;
2. willingness of the teacher to participate in the tape project;
3. race and sex of the teacher and the racial composition of their classes; and
4. the socio-economic-geographical location of the volunteer school.

Conferences were held with each of the recommending principals and volunteer teachers to clarify the purposes of the study, to discuss the study in detail and answer questions, and to obtain photographic release permission forms from those teachers willing to participate in the study. Numbers of teachers were selected, as conferences were culminated, to obtain 48 male teachers and 48 female teachers. In each group, by sex, equal numbers of Negro and Caucasian teachers were selected (24). Each group of 24 teachers, by sex and race, taught in classrooms predominantly composed of either Negro or Caucasian pupils. Pupil population samples were determined by the total racial count in the particular school as having more than 75% Caucasian or more than 75% Negro students enrolled [as determined by the 1964 racial census count of the Detroit school system].

### Sampling design

Table 1 illustrates the groupings of these 96 teachers and pupil population samples by race; sex of the teacher; grade levels or subject areas; organizational plans: homeroom, platoon/content and special classes; and graded and ungraded classes. Totals are shown for each division. No systematic effort was made to sample all grades or types of classes. No effort was made to equate the groups other than in terms of the previous criteria. The only stipulation was that the teacher " be in charge of the pupils in whatever activities were on-going for the scheduled day." No evaluation of lessons, teaching competency or cognitive effect was intended nor measured.

---

[1] Wording of the "Request for Participation" form issued in conjunction with Mr. George Jacobs, Instructional Research Office, Detroit Public School system.

TABLE 1
DESIGN OF TEACHER-PUPIL INTERACTION POPULATION SAMPLES

| Sample of Teachers: | | Caucasian Male | | Caucasian Female | | Negro Male | | Negro Female | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Pupils: | | Caucasian | Negro | Caucasian | Negro | Negro | Caucasian | Negro | Caucasian | |
| Organizational Plans: | Grade | | | | | | | | | TOT: |
| H | 6 | | GGGGG | | | GG | G | | | 8 |
| O | 5 | | G | GG | GGG | GG | GG | G | G | 12 |
| M Graded=G | 4 | | | G | GG | | | GG | G | 6 |
| E | 3 | G | | G | GG | | | GG | GG | 8 |
| R | 2 | | | UG | G | G | | G | GG | 7 |
| O Ungraded=U | 1 | | | UUG | GGG | | | GG | GU | 10 |
| O | KG | | | | | | | G | G | 2 |
| M | | | | | | | | | | 53 |
| PStandard Math | | | | | | 1 | | 1 | | 2 |
| LModern Math | | | | 1 | | | 1 | | | 2 |
| ASocial Studies | | 3 | | | | 2 | 1 | 1 | | 7 |
| TScience | | 3 | 2 | | | | 2 | | | 7 |
| OFine Arts | | 1 | 1 | | | | 1 | | 1 | 4 |
| OAuditorium | | | | | 1 | | 1 | | | 2 |
| NRemedial Reading | | | | | | | | U | | 1 |
| CGym | | 2 | | | | | | | | 2 |
| OHealth | | | 1 | | | | | | | 1 |
| NSpeech | | | | | | | | | | |
| T Correction | | 1 | | | | | | | | 1 |
| ESpanish | | 1 | | | | | | | | 1 |
| N | | | | | | | | | | 30 |
| T | | | | | | | | | | |
| SSpecial A | | | | | | | | | | |
| P(Older Pupils) | | | | | | UUUU | UUU | | | 7 |
| ESpecial B | | | | | | | | | | |
| C(Younger Pupils) | | | | UU | | | | | U | 3 |
| IEmotionally | | | | | | | | | | |
| A Disturbed | | | UU | | | | | | | 2 |
| LDeaf (4-6 yr.old) | | | | | | | | | U | 1 |
| TOTALS: | 96 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | |
| | 96 | 24 | | 24 | | 24 | | 24 | | |
| | 96 | 48 | | | | 48 | | | | |

Homeroom= 53 Platoon/Content= 30 Special= 13 Graded= 78 Ungraded= 18
96 96

Grade levels included Kindergarten through Sixth grade and content classes such as Auditorium, Mathematics, Social Studies, Science, Fine Arts, Health, Spanish as well as Gym and Speech Correction classes. Special classes of Remedial Reading, Special A and B, 'Emotionally disturbed' and one class of four-six year old deaf children were also included as representative of the types of classes provided by the Detroit Public School system.

Although the organizational plan of the classroom was not a consideration of the original purpose of the investigation, the samples of homeroom, platoon/content and special classes were subjected to analyses. Within these designations some pupil populations were classified as in "graded" or "ungraded" rooms and are so designated by the symbols G or U within the table for purposes of interpretation. Descriptions of these organizational plans will be presented with the discussion of these data.

The 96 teacher and pupil population samples chosen were located in 33 volunteer schools of the Detroit Public School system representing 13 inner city schools (3 of which were Great Cities School Improvement Program schools), 10 mid city schools and 10 suburban schools. Such samples are treated as discrete socio-economic-geographical entities but included the following numbers of classrooms, as shown in Table 2:

TABLE 2
TEACHER-PUPIL SAMPLE PLACEMENTS BY LOCATION AND ORGANIZATIONAL PLAN

| Number of 96 Samples by Location | | | | | Number of 96 Samples by Plan | | | |
|---|---|---|---|---|---|---|---|---|
| Suburban | Mid city | Inner city | G. Cities | | Suburban | Mid city | Inner city | G. Cities |
| 28 | 26 | 27 | 15 | =96 | Homeroom | | | |
| 29.2% | 27.1% | 28.1% | 15.6% | | 14 | 17 | 16 | 6 |
| | | | | | Platoon | | | |
| Total Homeroom Teachers=53 | | | | | 10 | 8 | 8 | 4 |
| Total Platoon Teachers =30 | | | | | Special | | | |
| Total Special Teachers =13 | | | | | 4 | 1 | 3 | 5 |
| | | | | =96= | 28 | 26 | 27 | 15 |

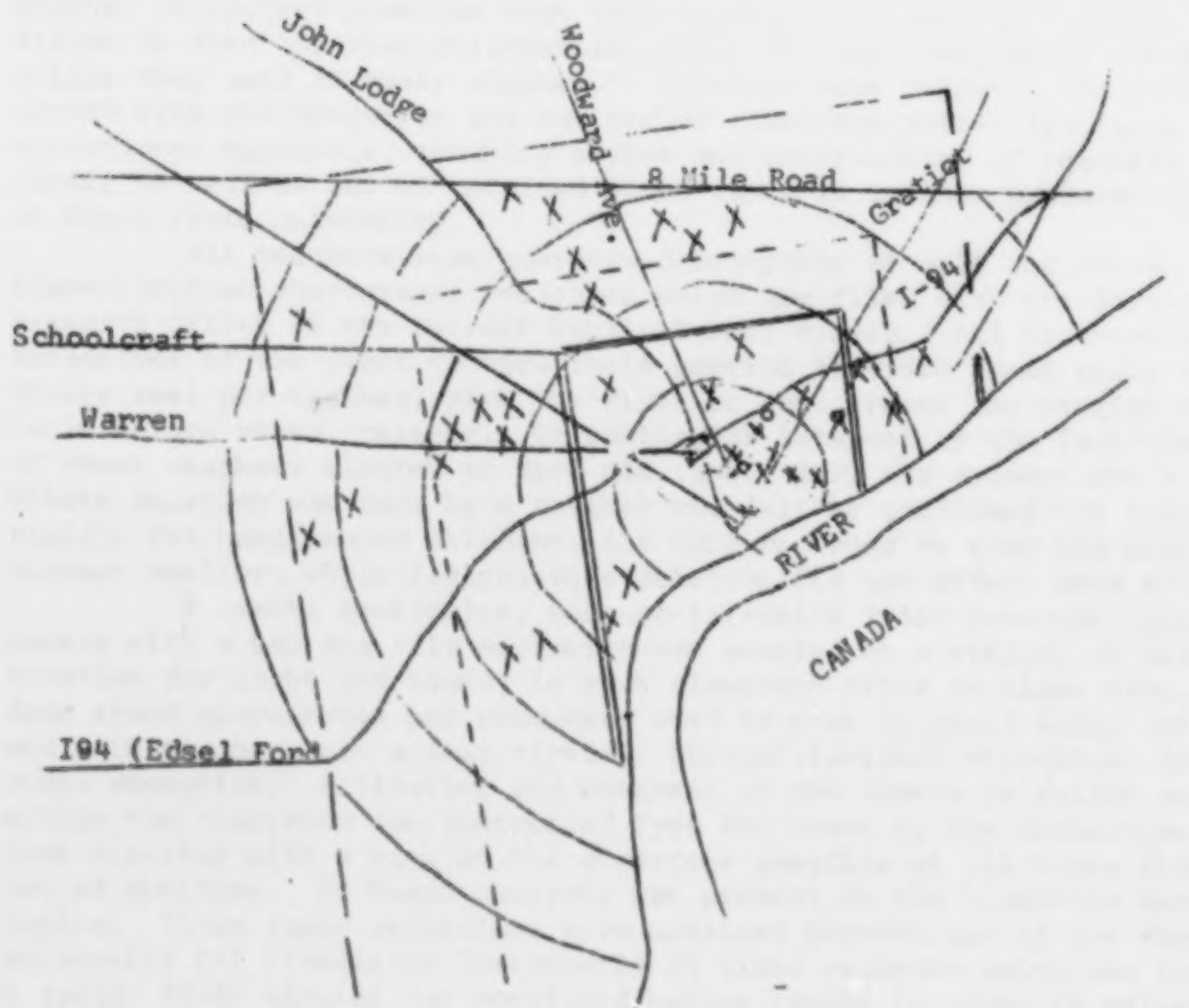
The 33 selected schools were all members of the Detroit Public school system and were geographically located within the designated boundaries of the city of Detroit, Michigan. Sixteen schools were located east of Woodward Avenue, traditionally a dividing line of the city from north to south, and 17 schools were located west of Woodward Avenue. Fifteen of the schools were situated south of the I-94 Edsel Ford expressway, which bisects the city from east to west, and 18 schools were situated north of this expressway. As shown in Figure 1, concentric circles with approximately two mile radii, from the original "hub" of the downtown area, are depicted. Dotted lines designate the boundaries of inner city, mid city and suburban areas as used in this study. Great Cities schools are identified with a circled symbol.

No attempt was made to equalize the numbers of samples in particular locations but upon completion of the project it was noted that these numbers were approximate when the three Great Cities Program schools were treated as separate entities. Homeroom and platoon/content classrooms were also of approximate numbers although the mid city location contained the least number of special classes sampled.

FIGURE 1

GEOGRAPHICAL LOCATIONS OF SELECTED URBAN SCHOOLS

DETROIT PUBLIC SCHOOL SYSTEM


John Lodge
Woodward Ave.
8 Mile Road
Gratiot
I-94
Schoolcraft
Warren
I94 (Edsel Ford
RIVER
CANADA

Geographical Location

13 ═ Inner city region schools
10 - - - - Mid-city region schools
10 — — Suburban region schools
( 3) ○ "Great Cities" Schools

33

Directional Distribution

16 Schools east of Woodward Avenue
17 Schools west of Woodward Avenue
15 Schools south of I-95(Edsel Ford)
18 Schools north of I-94(Edsel Ford)

□ Wayne State University

## Instrumentation and Data

Video tape recordings were obtained on days and times (either full morning or full afternoon sessions) arranged mutually with the principals and participating teachers. All teachers were asked to continue with whatever activities were planned and were asked not to arrange special "programs" or activities other than those normally conducted. Pupils were informed by the teacher or project director that this taping was a part of " school television to find out what children in school did most frequently and what materials they used in their classes." Teachers were informed the study was concerned with the frequency and variety of classroom activities, uses of instructional materials, teaching styles and interactions of teachers and pupils as well as use of retained video tapes in teacher preparation classes at Wayne State University.

All teachers were guaranteed anonymity of self and school and signed written photographic releases which are filed with the Instructional Research Office of the Detroit Public School system. All teachers availed themselves of the right to view their portion of video taped reels (one 90 minute reel per teacher) with the right to have erased any portion not acceptable before verbal release. Of particular interest is the fact that each of these teachers elected to view his tape. Only one request for a 10 minute deletion was made by a teacher who felt he concluded his lesson too rapidly for handicapped children. All data recorded on tape had been coded through monitors while taping; thus deletion did not affect data collection.

A remote controlled, Dumount-Fairchild TC350 box-type television camera with a pan and tilt mechanism was mounted on a tripod, at optimum location for light and sound, in each classroom prior to class time. Two to four stand microphones per room were used to pick up pupil audio activity and each teacher wore a Vega wireless (transistorized) microphone for teacher audio reception. Activation and movement of the camera to follow activity within the classroom was controlled from the truck by the technician and project director with a view of the classroom possible at all times through the use of monitors. No human observer was present in the classroom during the taping. Video taped recordings were obtained through use of the Wayne State University P-I (Precision Instrument) 3V video recorder using one inch tape. A trial 20-30 minutes was monitored before taping in order to adjust any mechanical or placement difficulties and to negate the "novelty" of the camera in the room. An account of the technical procedures and equipment set up is presented in Appendix D .[1]

Observational monitoring of each classroom totalled three hours per teacher. Taped time was adjusted to record those times when the teacher and students were actually participating; each class was observed for three hours by monitors- tapes totalled 90 minutes per teacher and class. Those times when pupils were doing tasks silently, taking tests, being read to by the teacher, having attendance or other routine matters attended to, etc. were recorded on the observational sheet but this "inactive" time was not taped in total duration. By watching monitors the video tape was reactivated whenever classroom activity was resumed.

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[1] Sincere appreciation is herein expressed to Mr. William Seydel, Field Technician, who furnished material for Appendix D and without whose integrity, responsibility and friendship this project could not have been completed.

Data gathered were the occurrences and frequencies of teachers' and pupils' activities, uses of materials and expressive behaviors occurring in these classrooms regardless of subject matter, grade level, grouping or organizational plans. These items included events of teacher-pupil-pupil interactions, as recorded on the Revised Observer Schedule and Record Form II (ROScAR II), shown in Appendix A, and the accompanying scoring sheets, shown in Appendix B. The ROScAR II is an amplification of an original check list by Dr. Donald Medley who granted his permission to alter the format and add new items. Both teachers and pupils were simultaneously observed in six alternating 15-minute periods: Page 1 lists "Classroom Activities" and "Uses of Instructional Materials" by teachers and pupils. Page 2 lists "Emotional Climate of the Classroom" items for both teachers and students. Tallies of observed occurrences of items on Page 1 were marked from the monitor while recording for 15 minutes; tallies of observed occurrences of items on Page 2 were tallied from the monitor while recording for the next 15 minutes recorded. This alternating procedure of marking tallies for items on each page for 15 minute periods was continued until there were six alternated 15-minute periods per classroom or a total of 90 recorded minutes. These 90 observational minutes coincided with the 90 video taped minutes.

TABLE 3
CATEGORIZATION OF ROScAR II ITEMS OF
TEACHER AND PUPIL INTERACTIONS

I. Classroom Activities- Teacher and Pupils
  A. Leadership B. Participation C. Assistance D. Mobility E. Restriction
II. Teaching styles- Pupil Responses
  A. Lecture-Question-Answer- Use of text or workbook- Recitation
  B. Problem Solving- Interpretation
  C. Demonstration- Manipulation- Illustration
  D. Supplemental- Enriched- Individualized
III. Sensory Emphasis
  A. Aural-Oral B. Visual C. Kinesthetic-Tactile
IV. Emotional Climate of the Classroom
  A. Positive and negative Verbal behaviors
  B. Positive and negative Physical behaviors
  C. Positive and negative Covert behaviors
  D. Teacher Punitive-pupil Disruptive behaviors
V. Uses of Instructional Materials
  1. Blackboard
  2. Bulletinboard
  3. Felt board
  4. Word/Number cards
  5. Slide, Filmstrip, Opaque projector
  6. Recorder, Record player, Piano
  7. Object Display
  8. Object Manipulation
  9. Resource materials
  10. Own materials
  11. Radio
  12. Map
  13. Chart
  14. Picture
  15. Museum or community materials order
  16. Film
  17. Television
  18. Demonstration
  19. Art
  20. Speaker
  21. Model
  22. Commercial Teaching Aid
  23. Teacher constructed aid
  24. Text-same
  25. Text-multilvl
  26. Supplemental Reading
  27. Writing lesson
  28. Copying
  29. Dictation

## Reliability and Validity

Inter-rater agreement levels, as shown in Table 4, were estimated by the following procedures:

Three Caucasian observers simultaneously recorded behaviors being taped, by monitors, during one 90-minute reel of one female, Caucasian teacher and pupil sample selected at random from the total sample. The ROScAR II forms were then scored and the pairs of scores for each observer pair in each category of teacher's and pupils' behaviors were subjected to product-moment correlation to obtain levels of agreement between observers. The resulting r's were computed in a t-test of significance with agreement levels beyond the .01 level of significance.[1] Further coding of one reel of video tape of a male, Negro teacher was subjected to a Fisher t-test of significance from scores by two of these three observers with results which were also indicative of no significant differences in recording.

TABLE 4
INTER-RATER AGREEMENT ON SIMULTANEOUS
VIDEO RECORDED OBSERVATIONS

| Observer Pairs Reel 43 | All Category Scores of Teacher and Pupils | t Test DF=40-2=38 $t= \frac{.r\sqrt{df}}{\sqrt{1.-r^2}}$ |
|---|---|---|
| I and II | .862 | $t=\frac{.862\sqrt{38}}{\sqrt{1.-.862^2}} = 10.52$ |
| III and II | .886 | |
| III and I | .949 | |
| Grand Mean: | .899 | $t=\frac{.886\sqrt{38}}{\sqrt{1.-.886^2}} = 11.80$ |

Significant agreement $r_{.05} = .304$
Highly significant agreement $r_{.01} = .393$ $t=\frac{.949\sqrt{38}}{\sqrt{1.-.949^2}} = 18.57$

| Observer Pair Reel 79 | Mean Scores in Teacher Categories | | Mean Scores in Pupil Categories | | DF=40-2=38 $t=\frac{\bar{X}_1-\bar{X}_2}{\sqrt{\frac{\sigma^2}{N_1}+\frac{\sigma^2}{N_2}}}$ |
|---|---|---|---|---|---|
| I and II | 35.8 | 31.6 | 16.0 | 14.7 | |
| Standard Deviation | 34.2 | 28.0 | 18.4 | 15.0 | |

$$\text{Teacher } t= \frac{35.8 - 31.6}{\sqrt{\frac{34.2^2}{20} + \frac{28.0^2}{20}}} = \frac{4.2}{9.8} = .43 \qquad \text{Pupils } t= \frac{16.0 - 14.7}{\sqrt{\frac{18.4^2}{20} + \frac{15.0^2}{20}}} = \frac{1.3}{5.3} = .25$$

Significant difference t=.05=2.02
Highly significant difference t= .01=2.71

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[1] The author wishes to express appreciation to Dr. John Langer and Dr. Dewey Chambers for their voluntary and invaluable assistance in coding selected reels.

The interobserver agreement coefficients for all pairs of observers were considered acceptable in establishing the reliability of the scoring and objectivity of these three observers. The Fisher t-test of significant differences among means, scored from a different taped reel, showed no significant differences between one pair of original observers.

Validity of the instrument was established in three ways:

1. The instrument has face validity in that the definitions of each variable describe the kinds of things teachers and pupils do in the classroom as contrasted with being ready to do; tally sheets of the categories accounted for the same amount of time on actions for 90 minutes of teacher and pupil behavior for the total sample recorded by these observers of the same subjects.
2. The categories of the ROScAR II have been, in the main, previously used in two major studies and one pilot study (with similar correlational and factor analysis results) to observe and record teachers' and pupils' behaviors in similar situations.
3. Of the three observers for this study, one had more than 10 years of teaching and college supervision experience; one had 8 years of teaching and 5 years of administrative experience as an elementary school principal; and one observer had had 18 years of teaching, 15 of which had been in college supervision. All observers had served in both public and laboratory schools as teachers and supervisors; each had earned a doctoral degree from Michigan universities.

# CHAPTER III

## ANALYSES OF THE DATA

Analysis of the data was concerned with scores assigned to the observations of the 89 variables of teacher-pupil classroom interactions. Scores were constructed on the basis of the numerical count of the total number of occurrences of items included as "incidents" of a category. The score of each category, illustrated in the scoring sheets shown in Appendix B, were the observed occurrences in the 90 minute video-taped observations.

These data were subjected to an analysis of variance, analysis of covariance and intercorrelational analysis for the study.[1]

To illustrate the analytic techniques applied, the following illustrative example of the category "Teacher Leadership" is presented. This category consisted of several items- [work with individual pupils; work with a small group; teacher calls on pupil(s); reads (from text) to pupil(s); reads or tells story to pupil(s); leads singing, exercise, game or drill; test situation; draws or diagrams at board; writes or works at board; reports or gives talk from notes; circulates or checks pupil(s) work]- in which the teacher was the "central figure" of the observation program. Each time any of these items of teacher behavior were observed, a tally was recorded on the Revised Observer Schedule and Record Form II. The total numerical count of occurrences was then transferred to the scoring sheet opposite each item. All items included in a given category were then added to obtain the total sum score for that particular category. The sums for each category for both teacher and pupil samples were obtained in this manner for each of the 96 teacher-classroom groups in all combinations.

## ANALYSIS OF VARIANCE AND COVARIANCE TECHNIQUES

An illustration of how the application of the analysis of variance technique was employed in the study is presented in the following tables for the variable "Teacher Leadership". All variables and categories of the study were analyzed, in similar fashion, by this technique.

Table 5A-1 shows the score data originally entered in the single-classification grid. In the Teacher race-Pupil race sample, 24 teachers-pupil sample groups were employed. Caucasian teachers and Caucasian pupils, hereafter denoted by C/C; Negro teachers and Negro pupils, denoted by N/N, were the racially "like" groupings. The racially dissimilar groups consisted of Caucasian teachers and Negro pupil samples (C/N) and Negro teachers with Caucasian pupil samples (N/C). Pupil samples were designated on the basis of 75 per cent or more of a class of students being composed of pupils from either the Negro or Caucasian race. Sums of the total occurrences of category items, group means and standard deviations were computed for each group. In terms of "Teacher Leadership" the group means show that the Negro teachers with Caucasian students evidenced more incidents of Leadership, or being the "central" figure", in the classroom than other groupings of teachers and pupils. The group evidencing the lowest mean and the greatest standard deviation scores were the Caucasian-Caucasian group.

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[1] Particular recognition for the professional Inter-Institutional cooperation in facilitating data processing is herein noted in appreciation for the services of Dr. William C. Morse, Consultant; Dr. Charles Lehman, Assistant to the Dean of the School of Education; Dr. M. Clemens Johnson, Statistical Programmer and Consultant; and Dr. F. Bartels, Computing Center Director- all of The University of Michigan, Ann Arbor, Michigan.

TABLE 5A-1
TOTAL SCORES ACROSS CATEGORY 1 USED IN OBSERVATIONS
OF TEACHER RACE- PUPIL RACE SAMPLES

| Variable Scores Category 1 TEACHER LEADERSHIP | C/C Caucasian Teachers Caucasian Pupils | N/N Negro Teachers Negro Pupils | C/N Caucasian Teachers Negro Pupils | N/C Negro Teachers Caucasian Pupils |
|---|---|---|---|---|
| Teacher # Scores: | | | | |
| 1 | 37 | 113 | 78 | 14 |
| 2 | 22 | 69 | 83 | 105 |
| 3 | 39 | 56 | 56 | 110 |
| 4 | 51 | 118 | 30 | 138 |
| 5 | 103 | 100 | 167 | 132 |
| 6 | 78 | 92 | 145 | 110 |
| 7 | 98 | 141 | 81 | 95 |
| 8 | 220 | 54 | 82 | 63 |
| 9 | 108 | 93 | 87 | 99 |
| 10 | 102 | 80 | 103 | 105 |
| 11 | 84 | 87 | 86 | 91 |
| 12 | 59 | 93 | 124 | 143 |
| 13 | 82 | 90 | 54 | 105 |
| 14 | 73 | 128 | 101 | 51 |
| 15 | 111 | 88 | 79 | 81 |
| 16 | 88 | 83 | 104 | 70 |
| 17 | 99 | 98 | 94 | 111 |
| 18 | 40 | 74 | 66 | 87 |
| 19 | 95 | 36 | 119 | 115 |
| 20 | 43 | 57 | 129 | 58 |
| 21 | 82 | 91 | 72 | 94 |
| 22 | 134 | 161 | 90 | 94 |
| 23 | 65 | 112 | 82 | 95 |
| 24 | 92 | 91 | 57 | 103 |
| Total | 2053 | 2205 | 2169 | 2269 |
| Group Mean | 85.54 | 91.91 | 90.38 | 94.56 |
| Stand.Dev. | 39.69 | 28.21 | 30.37 | 28.98 |

VARIANCE TABLE 5A-2

| Source of Variation | df | Sum of Squares | Mean Square | F-Ratio |
|---|---|---|---|---|
| Between groups | 3 | 1046.97 | $s^2_b$ = 348.97 | |
| Within groups | 92 | 99239.50 | | $F = \frac{348.97}{1078.69} = .32$ |
| Total | 95 | | $s^2_w$ = 1078.69 | |

df= 94. $F_{(3/90,.01)}$= 4.01** $F_{(3/90,.05)}$= 2.71* n= 24 Teachers-Pupil samples per group

The analysis of variance technique was applied to the data of Table 5A-1 and the results are presented in terms of the variances between groups and within groups in the Variance Table 5A-2. The between groups mean square and the within groups mean square form the numerator and denominator, respectively, for the computation of the value of the F-ratio associated with the analysis. In those cases where the value of the F-ratio was found to be "significant" or "highly significant", the t- test for significant differences between independent group means was also employed. In the illustrative category shown here, the value of the F-ratio was not significant.

Despite this fact, an example of the t- test is also shown with $\overline{X}_{CC}$ denoting the Caucasian teacher-Caucasian pupil sample; $\overline{X}_{NN}$ = the Negro teacher-Negro pupil sample; $s_{w1}^2$ = the variance for one of the groups; $s_{w2}^2$ = the variance for the other group; and $n_1$ and $n_2$ indicating the number of teachers in each respective teacher-pupil grouping.

$$t = \frac{\overline{X}_{NN} - \overline{X}_{CC}}{\sqrt{\frac{s_{w1}^2}{n_1} + \frac{s_{w2}^2}{n_2}}} = \frac{91.91 - 85.54}{\sqrt{\frac{28.21^2}{24} + \frac{39.69^2}{24}}} = \frac{6.37}{\sqrt{98.79}} = \frac{6.37}{9.94} = .64$$

In the example of Teacher Leadership, shown here, the t- test of significant differences between independent group means was found to be not significant.

From the Variance Table (5A-2) it may be noted that the value of the F-ratio was .32. This value of F indicated no significant differences between groups although the t- test was shown for illustrative purposes in a comparison of two groupings of the Teacher race-Pupil race samples.

Since this finding does not indicate the necessity for a t- test of significant differences between independent group means, another example in which the F-ratio of the respective variances was found to be significant is shown. The scores for the category "Pupil Assistance" are shown in Table 5A-3 on the following page.

In the Variance Table shown with Table 5A-3, it will be noted that the value of the F-ratio is 3.76, which indicated a significant difference between groups. This finding necessitated the employment of the t- test to determine specific significant differences between independent group means. The results of the t- tests showed that significant differences, at the .05 level, prevailed between the mean scores of the (1) N/N group (Column 5) and the N/C sample; and (2) the C/N sample group (Column 6) and the N/C group.

TABLE 5A-3
ANALYSIS OF VARIANCE-PUPIL ASSISTANCE

| Variable Scores<br>Category 8<br>PUPIL ASSISTANCE | C/C<br>Caucasian Teachers<br>Caucasian Pupils | N/N<br>Negro Teachers<br>Negro Pupils | C/N<br>Caucasian Teachers<br>Negro Pupils | N/C<br>Negro Teachers<br>Caucasian Pupils |
|---|---|---|---|---|
| Teacher # | | | | |
| Scores: | | | | |
| 1 | 38 | 20 | 12 | 74 |
| 2 | 30 | 10 | 15 | 15 |
| 3 | 7 | 17 | 13 | 23 |
| 4 | 7 | 57 | 13 | 28 |
| 5 | 45 | 37 | 27 | 60 |
| 6 | 33 | 38 | 21 | 40 |
| 7 | 46 | 19 | 18 | 25 |
| 8 | 9 | 20 | 29 | 94 |
| 9 | 27 | 14 | 17 | 27 |
| 10 | 33 | 24 | 33 | 49 |
| 11 | 56 | 9 | 48 | 33 |
| 12 | 23 | 8 | 52 | 76 |
| 13 | 15 | 12 | 40 | 27 |
| 14 | 13 | 32 | 4 | 24 |
| 15 | 5 | 10 | 24 | 14 |
| 16 | 39 | 9 | 9 | 21 |
| 17 | 66 | 21 | 11 | 3 |
| 18 | 25 | 16 | 32 | 16 |
| 19 | 23 | 10 | 5 | 18 |
| 20 | 33 | 21 | 8 | 18 |
| 21 | 13 | 24 | 26 | 61 |
| 22 | 28 | 40 | 7 | 22 |
| 23 | 41 | 27 | 20 | 46 |
| 24 | 37 | 18 | 20 | 16 |
| Totals | 692 | 513 | 499 | 730 |
| Group Mean | 28.83 | 21.39 | 12.97 | 22.32 |

VARIANCE TABLE 5A-3

| Source of Variation | df | Sum Mean Square | | F-Ratio |
|---|---|---|---|---|
| Between groups | 3 | $s_b^2 =$ 1051.02 | | |
| Within groups | 92 | | $F = \frac{1051.02}{279.18} =$ | 3.76* |
| Total | 95 | $s_w^2 =$ 279.18 | | |

df= 94. $F_{(3/90,.01)} =$ 4.01** $F_{(3/90,.05)} =$ 2.71* n=24 Teachers-Pupil samples per group

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

t- tests of significant differences between independent group means:
df= 24 + 24 - 2= 46. t(.01)= 2.69** t(.05)= 2.02*

| C/C vs. N/N | C/C vs. C/N | C/C vs. N/C | N/N vs. C/N | N/N vs. N/C | C/N vs. N/C |
|---|---|---|---|---|---|
| 1.78 | 1.90 | -1.02 | .16 | -2.47* | -2.58* |

In addition to the application of the analysis of variance technique, the analysis of covariance was applied to the 20 major categories of teacher-pupil relationships of the study for the total sample of 96 individual teachers and their classrooms.

Using "Teacher Leadership" and "Pupil Leadership" as examples, Table 5A-4 summarizes the data for these two variables. Results of the computation of mean squares of (X) and of (Y), based on 3 degrees of freedom, for a between groups component and a within groups component, based on 92 degrees of freedom, revealed an F-ratio of .47 for these two categories which was found to be not significant. A correlation between the initial and final variable resulted in an r = .068 which was found to be not significantly different from zero. In each case the significance of the value of the correlation coefficient "r" was tested by the following t- test formula:[1]

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \qquad df = (n-2)$$

TABLE 5A-4

ANALYSIS PROCEDURES FOR CATEGORIES OF TEACHER- PUPIL "LEADERSHIP"[2]

| Initial Variable 1: TEACHER LEADERSHIP | | | Final Variable 2: PUPIL LEADERSHIP | | |
|---|---|---|---|---|---|
| Group | Mean | Stand.Dev. | Group | Mean | Stand.Dev. |
| 1-C/C | 85.54 | 39.69 | 1-C/C | 23.54 | 16.30 |
| 2-N/N | 91.91 | 28.21 | 2-N/N | 29.17 | 26.41 |
| 3-C/N | 90.38 | 30.37 | 3-C/N | 25.79 | 16.41 |
| 4-N/C | 94.56 | 28.98 | 4-N/C | 23.00 | 16.86 |

COVARIANCE TABLE 5A-4

| Source of Variation | df | Sum of Squares | Mean Square | Source of Variation | df | Sum of Squares | Mean Square |
|---|---|---|---|---|---|---|---|
| Between groups | = 3 | 1046.92 | 348.97 | Between groups | = 3 | 557.40 | 185.80 |
| Within groups | =92 | 99239.58 | 1078.69 | Within groups | =92 | 35993.22 | 391.23 |
| Total | 95 | | | Total | 95 | | |
| | | F-Ratio=.32 | | | | F-Ratio=.47 | |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Summary of Data for Variable 2:

| Group | Adjusted Mean | Source of Variation | df | Adj.Sum Squares | Mean Square |
|---|---|---|---|---|---|
| 1-C/C | 23.75 | Between groups | = 3 | 551.01 | 183.67 |
| 2-N/N | 29.12 | Within groups | =91 | 35832.22 | 393.76 |
| 3-C/N | 25.80 | Total | 94 | F-Ratio =.47 | |
| 4-N/C | 22.84 | | | | |

Correlation Between Final and Initial Variable=.068 "r"(.01)=.239**; (.05)=.205*

*Percentile values of "r" abridged from R.A. Fisher and F. Yates, Statistical Tables, published by Oliver and Boyd, Ltd. and furnished by Dr. M. Clemens Johnson, Consultant, The University of Michigan, Ann Arbor, Michigan.

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[1] The invaluable assistance of Dean Joseph F. Hill, Wayne State University, and of Dr. Donald Medley, Educational Testing Service, Consultants, with the statistical presentations and interpretations, as well as meticulous editing of the report drafts, is gratefully and fully acknowledged.

[2] All subsequent tables present significant data for categories of the study analysed in the same manner. Those values found to be significant (i.e., at the .05 level) are indicated by one asterisk; those that were found to be highly significant (i.e., at the .01 level) are indicated by two asterisks.

# CHAPTER IV

## FINDINGS AND CONCLUSIONS

The original purpose of the study was to analyze the following teacher-pupil classroom sample groups to discover if significant differences existed between (1) Teacher race- Pupil race samples and (2) Teacher sex/race- Pupil race samples.

Subsequent analyses were also obtained for (3) Socio-Economic-Geographical samples; two types of classroom organizational plans: (4) Homeroom, Platoon and Special classes samples; (5) Graded and Ungraded classroom samples; and for (6) two Great Cities School Improvement Program schools samples.

In the following presentations, only significant or highly significant values are indicated. The findings reported will have significance for conclusions. For those findings not statistically significant, but inferred from the data pertaining to the general question area of teacher-pupil interactions in schools located in an urban area, a discussion in the section entitled "Trends and Implications" will be found at the end of Chapter IV of this report.

### Teacher Race- Pupil Race Data

The Teacher race- Pupil race results found to be significant are presented in the following variance table with accompanying t- tests results:

TABLE 6A-1
VARIANCE TABLE OF SIGNIFICANT TEACHER RACE-
PUPIL RACE CLASSROOM INTERACTIONS

| Variable Scores Category 6 PUPIL ASSISTANCE | Caucasian Teachers Caucasian Pupils C/C | Negro Teachers Negro Pupils N/N | Caucasian Teachers Negro Pupils C/N | Negro Teachers Caucasian Pupils N/C |
|---|---|---|---|---|
| Group Mean | 28.83 | 21.39 | 20.79 | 34.60 |

VARIANCE TABLE 6A-1

| Source of Variation | df | Mean Square | | F-Ratio |
|---|---|---|---|---|
| Between groups = | 3 | 1051.02 | | |
| Within groups = | 92 | 279.18 | $F = \frac{1051.02}{279.18} =$ | 3.76* |
| Total | 95 | | | |

df= 94. $F_{(3/90,.01)} = 4.01^{**}$ $F_{(3/90,.05)} = 2.71^{*}$ n=24 Teachers-Pupil samples per group

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

t- tests of significant differences between independent group means:
df= 24 + 24 - 2 = 46. t(.01)= 2.69** t(.05)= 2.02*

| C/C vs. N/N | C/C vs. C/N | C/C vs. N/C | N/N vs. C/N | N/N vs. N/C | C/N vs. N/C |
|---|---|---|---|---|---|
| 1.78 | 1.90 | -1.02 | .16 | -2.47* | -2.58* |

Findings and Conclusions:

1. The value of the F-ratio shown in Table 6A-1 of 3.76 indicated a significant difference between group means in the Pupil Assistance category. The t-

tests showed that significant differences occurred among Caucasian and Negro sample groups of pupils. The Caucasian pupils, whose teachers were Negroes (Columns 5 and 6) showed more evidence of assistance to teachers and peers than did Negro pupil samples regardless of the race of their teachers by mean scores.

2. This is the only category showing significant (.05) differences in variance and in t- test results for the racial data regarding both teacher and pupil sample groups. No other significant differences were revealed in major categories of the racial data section.

It is therefore concluded that racial differences, in these representative teacher-pupil samples of an urban area, with the exception of that cited above, did not exist in these measures of teacher-pupil interactions.

## Teacher-Pupil Classroom Interaction Category Correlations

In a further investigation of teacher-pupil classroom interaction relationships, correlations between teacher and pupil scores in discrete categories were conducted. Fully realizing that correlation does not establish any evidence of "causality", the correlational analysis is presented to reveal the significant relationships between all but three of the teacher-pupil categories as shown in Table 7A-1. These correlations were computed from the scores of the total sample of 96 teachers and 96 different classrooms of pupils without regard to various types of groupings presented in the study.

TABLE 7A-1

CORRELATIONS BETWEEN TEACHER-PUPIL CLASSROOM INTERACTIONS

| Description of Interaction Category | | Description of Interaction Category | |
|---|---|---|---|
| CLASSROOM ACTIVITIES | "r" | SENSORY EMPHASIS | "r" |
| Teacher-Pupil Leadership | .011 | Teacher-Pupil Aural-Oral | .521** |
| Teacher-Pupil Participation | .598** | Teacher-Pupil Visual | .442** |
| Teacher-Pupil Assistance | .374** | Teacher-Pupil Kinesthetic/Tactile | .388** |
| Teacher-Pupil Mobility | .525** | USES OF MATERIALS | |
| Teacher-Pupil Restriction | .229* | Teacher-Pupil Total Uses of Material | .342** |
| TEACHING STYLE-PUPIL RESPONSES | | EMOTIONAL CLIMATE OF CLASSROOM | |
| Teacher-Pupil Lecture,Question, Answer,Text,Workbook,Reciting | .487** | Teacher-Pupil Positive Verbal | .609** |
| Teacher-Pupil Problem-Solving, Interpretation | .370** | Teacher-Pupil Negative Verbal | .168 |
| Teacher-Pupil Demonstration, Manipulation,Illustration | .480** | Teacher-Pupil Positive Physical | .564** |
| Teacher-Pupil Supplemental, Enriched,Individualized | .776** | Teacher-Pupil Negative Physical | .497** |
| | | Teacher-Pupil Positive Covert | .710** |
| | | Teacher-Pupil Negative Covert | .353** |
| | | Teacher Punitive-Pupil Disruptive | .152 |
| | | "r"(.01)=.237** (.05)- .205*[1] | |

Findings and Conclusions:

1. It should be noted that 16 of these Teacher-Pupil classroom interaction categories [classroom interaction in this study is differentiated from variance interaction] are highly and significantly related.

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[1] See Footnote, Table 5A-4.

## Classroom Activities

1. In the Classroom Activities section, Teacher Participation, Mobility and Assistance are highly and significantly related to Pupil Participation, Mobility and Assistance, respectively.

2. Related at the lesser level of significance (.05) is the category of Teacher (self) Restriction and Pupil (imposed) Restriction.

3. Only a low positive relationship existed between Teacher and Pupil Leadership. High teacher Leadership may not be related to either fostering or preventing pupils from assuming leadership roles in the classroom but those teachers who participated with, and assisted, children were obviously more mobile in these actions and permitted or encouraged their pupils to also participate, move about the classroom and assist others. Those teachers who tended to restrict themselves to their desks or who did not circulate about the room assisting pupils tended to also impose restriction upon their pupils.

## Teaching Styles-Pupil Responses

1. Relationships between each teacher variable and similarly described pupil variable in the Teaching Style-Pupil Responses section were highly and significantly related. The highest positive relationship was shown in the Supplemental-Enriched-Individualized area.

2. Teacher use of the Lecture-Recitation et.al.style was highly and significantly related to pupil use of questions, answers, text, workbook and recitation activities.

3. Teacher use of Demonstration-Manipulation-Illustration in teaching methodology was highly and significantly related to pupil response in kind and degree.

4. Problem-Solving and Interpretation style by the teacher was also related to pupil problem-solving and interpretive responses at a highly significant level.

5. The particular "output" of the teacher style was significantly related to the particular "feedback" responses from pupils.

## Sensory Emphasis

1. As expected, the highest and most significant relationship in the section concerned with Sensory Emphasis in the classroom was in the Aural-Oral category. Although no distinction was made between teacher-talk and pupil-talk or listening by either sample, this finding verifies previous studies reporting "talking" as a predominant element in classrooms.

2. In the Visual and Kinesthetic/Tactile uses of materials categories, teacher use seemed reflected in highly significant use by pupils of these types of sensory output and impressions.

3. Concordantly, one might expect the lack of visual and "handling of materials" to be strongly related to lack of pupil use of these types of materials. Such implications might well be utilized in research with pupils designated as "culturally disadvantaged" in order to establish more clearly the influence of types of sensory emphases used by teachers with children from homes lacking these stimuli.

## Emotional Climate of the Classroom

1. In support of the findings reported in the literature related to the positive affective climate of the classroom, it may be seen that the teacher-pupil positive empahty categories bear the strongest and most highly significant relationships. Positive Covert, Positive Verbal and Positive Physical interactions between teachers and pupils show higher degrees of relationship than do the negative categories of Negative Physical and Negative Covert interactions, although these latter categories are also each significantly related at a high level.

2. Only a low positive relationship was found between amounts of Teacher-Pupil Negative Verbal and Punitive-Disruptive interactions.

3. The implication proposed is that "pleasure-seeking" interactions are more strongly manifested than the "pain-rebuffing" interactions, which may be then diverted into Negative Physical and Negative Covert reactions by pupils rather than appearing in the more overt Negative Verbal response to the teacher-authority figure in the classroom. Such an interpretation seems logical to presume regarding elementary age children in adult-dominated situations.

## Teacher- Pupil Classroom Interaction Category Inter-correlations

Further relationships of significance are presented as a supplement to this report in Appendix E and list those intercorrelations among variables of the study which were at the .01 level of significance. Both inter- and intra-associations may yield leads to "clusters" of behaviors tending to "go together" for further research in the interaction aspects of the classroom.

## Teacher Sex/Race- Pupil Race Data

In the second of these sample analyses, a comparison of teachers by sex and race with student racial samples was made. Each group consisted of equal numbers of males and females (12 each) in the racially "like" groups (MC/C and MN/N; FC/C and FN/N) and in the racially dissimilar samples (MC/N and FC/N; MN/C and FN/C) for the total sample of 96 teachers and classroom groups. The same techniques of analyses of variance and t- tests of independent group means shown earlier were employed to discover significant results included in the following tables:

TABLE 8A-1
VARIANCE TABLE OF SIGNIFICANT TEACHER SEX/RACE-
PUPIL RACE CLASSROOM INTERACTIONS

| Variable Scores Category 6 PUPIL ASSISTANCE | | 1 Caucasian Male Teacher | 2 Female Teacher | 3 Negro Male Teacher | 4 Female Teacher | 5 Caucasian Male Teacher | 6 Female Teacher | 7 Negro Male Teacher | 8 Female Teacher |
|---|---|---|---|---|---|---|---|---|---|
| | | Caucasian Pupils | | Negro Pupils | | Negro Pupils | | Caucasian Pupils | |
| Group | Means | | | | | | | | |
| 1-MC/C | 29.50 | | | | | | t=2.21* | | |
| 2-FC/C | 28.17 | | | | | | | | |
| 3-MN/N | 23.42 | | | | | | | t=-2.59* | |
| 4-FN/N | 19.18 | | | | | | | t=-3.24** | |
| 5-MC/N | 24.83 | | | | | | | t=-2.48* | |
| 6-FC/N | 16.75 | | | | | | | t=-3.54** | |
| 7-MN/C | 45.33 | | | | | | | | |
| 8-FN/C | 24.69 | | | | | | | t=-2.50* | |

VARIANCE TABLE 8A-1

| Source of Variation | df | Mean Square | | F-Ratio |
|---|---|---|---|---|
| Between groups | = 7 | 902.47 | | |
| Within groups | =88 | 255.92 | $F = \frac{902.47}{255.92} =$ | 3.53** |
| Total | 95 | | | |

df= 93. $F_{(7/90,.01)} = 2.86$** $F_{(7/90,.05)} = 2.02$*

df= 12 + 12 - 2= 22. t(.01)= 2.82** t(.05)= 2.07*

Findings and Conclusions:

1. Although the "grid" is not shown here, an analysis of variance and t-tests of the independent group means of the compared Teacher sex/race- Pupil race sample groups in the category of Pupil Assistance indicated the value of the F-ratio as 3.53, revealing highly significant variances between groups of pupils. Reading from the left (Group Means column) across the numbered columns of Table 8A-2, t- tests located differences at highly significant levels (in column 7) between Caucasian pupil groups whose teachers were male Negroes and Negro pupil groups (Groups 4 and 6) whose teachers were women of both races. Pupil Assistance mean scores of the Caucasian pupil sample with male Negro teachers was significantly higher than mean scores of Negro pupil samples with female teachers of either race.

2. Significant differences occurred in mean scores of this same Caucasian pupil group, in column 7, when compared with mean scores of Negro pupil samples (Groups 3 and 5) with male teachers of either race.

3. This same Caucasian sample (Column 7) with male Negro teachers also scored significantly higher mean score in Assistance than did a similar Caucasian pupil group (Group 8) whose teachers were female Negro teachers.

4. The Negro pupil group (Column 6) whose teachers were female Caucasians scored a significantly lower group mean score in Assistance than did a sample of Caucasian pupils (Group 1) with male Caucasian teachers.

5. This study, with no attempt at refinement into age or grade levels, revealed significant differences between particular pupil samples with different sex/race combinations of teachers and pupils in the mean scores of the Pupil Assistance category.

Such differences in assistance to teachers in the classroom imply that pupil preferences of teachers, by sex, may be worthy of investigation at varying age or grade levels. Opinions that "men are 'better' for X-age children...or 'disadvantaged children' or that women are needed with 'young' children" have not been supported by research findings.

Only one other category indicated significant variance between sex/race-race samples. These data are presented in Table 8A-2 with significant differences in amounts of Kinesthetic/Tactile use of materials by pupils shown in the t- test results.

Findings and Conclusions:

1. The value of the F- ratio in the category Pupil Kinesthetic/Tactile use of materials was 3.16 which indicated a highly significant variance between groups. This finding necessitated a t- test of significant differences between independent group means and resulted in highly significant differences as shown in Columns 3, 7 and 8 of the following table. Reading across the table from left to right and down column 8, pupil samples in the female N/C group showed significantly higher mean scores in this category than other samples in the male C/C, the male N/C and the female C/N sample groups.

2. Other significant differences in group means in this category occurred at the .05 level in comparisons of the female N/C (Column 8) sample with Negro pupil groups whose teachers were female Negroes or male Caucasians in Groups 4 and 5.

3. Lower level significant (.05) differences in this category are shown between the mean scores of the Negro and Caucasian pupil samples whose teachers were men of their own race with Negro pupil group means in Column 3 significantly higher than means of the Caucasian pupils in Group 1.

TABLE 8A-2
VARIANCE TABLE OF SIGNIFICANT TEACHER SEX/RACE-
PUPIL RACE CLASSROOM INTERACTIONS

| Variable Scores<br>Category 24<br>PUPIL KINESTHETIC/<br>TACTILE USE OF<br>MATERIALS | | Caucasian Teacher Caucasian Pupils | | Negro Teacher Negro Pupils | | Caucasian Teacher Negro Pupils | | Negro Teacher Caucasian Pupils | |
|---|---|---|---|---|---|---|---|---|---|
| Group | Means | 1 Male Teacher | 2 Female Teacher | 3 Male Teacher | 4 Female Teacher | 5 Male Teacher | 6 Female Teacher | 7 Male Teacher | 8 Female Teacher |
| 1-MC/C | 3.18 | | | t=-2.69* | | | | | t=-3.74** |
| 2-FC/C | 4.58 | | | | | | | | |
| 3-MN/N | 5.50 | | | | | | | t=2.56* | |
| 4-FN/N | 4.27 | | | | | | | | t=-2.64* |
| 5-MC/N | 3.82 | | | | | | | | t=-2.61* |
| 6-FC/N | 3.83 | | | | | | | | t=-3.03** |
| 7-MN/C | 3.50 | | | | | | | | t=-3.65** |
| 8-FN/C | 6.45 | | | | | | | | |

VARIANCE TABLE 8A-2

| Source of Variation | df | Mean Square | | F-Ratio |
|---|---|---|---|---|
| Between groups | = 7 | 13.01 | | |
| Within groups | =80 | 4.12 | $F= \frac{13.01}{4.12}$ = | 3.16** |
| Total | 87 | | | |

df= 85. $F_{(7/80,.01)}$= 2.89** $F_{(7,80,.05)}$=2.03*

df= 12 + 12 - 2 = 22. t(.01)= 2.82** t(.05)= 2.07*

4. Pupil differences were also apparent between the Negro and Caucasian pupil samples when both groups were taught by male Negro teachers, with Negro pupils (Group 3) scoring significantly higher in mean scores than Caucasian pupils (Column 7) whose teachers were also male Negroes.

5. The outstanding number of significant differences in the female N/C sample in Column 8 seemed attributable to the fact that of these 12 teachers, 10 taught in either primary grades or Special Education classes where methodology emphasis would strongly be concerned with such a kinesthetic/tactile approach. Similarly, more male Negro teachers were employed in the Special Education area, in these samples, than were male Caucasian teachers.

Such distinctions of grade level and "teaching area" point out the differentiations which must obviously be made in any investigation of teacher-pupil interactions. Specific studies designed to incorporate features of age level or subject area in elementary schools should limit or refine the generalizations regarding behaviors in the classroom.

It is thus concluded that when comparisons of groups on the basis of the sex of the teacher were made, in only two categories- those of Pupil Assistance and uses of Kinesthetic/Tactile materials- were significant differences discovered. All other categories of interaction showed no significant differences.

## School Socio-Economic-Geographical Data

Sample:

The 33 elementary schools included in this study were grouped by socio-economic-geographical location, as previously indicated on the map in Figure 1. These indicated areas parallel the distinctions made on the Detroit Public School system map in two-mile circles radiating from the center hub of the original downtown area of the city. Thirteen schools were located in the "inner city" area, 10 in the "mid city" area and 10 were located in the "suburban" sections of the city. Three of the 13 "inner city" schools were also members of the Detroit Great Cities School Improvement Program and were thus treated separately from other "inner city" schools.

Data presented were analyzed in the same fashion as those connected with categories discussed earlier. Only those results indicated as significant by the value of the F-ratios and t- tests are presented in the discussion.

Numbers of teachers and classroom samples by location and organizational plan are listed in Table 9A-1 as an aid in interpretation. Location of the schools are designated as socio-economic entities implied in their geographical titles of Suburban, Mid-city, Inner city and Great Cities schools. All classrooms fit the criteria, presented later in the report, for the organizational plan of the classrooms into three types of plans: Homeroom, Platoon/content and Special classes.

TABLE 9A-1

INDIVIDUAL TEACHER-CLASSROOM PLACEMENTS BY LOCATION AND ORGANIZATIONAL PLAN

Number of Total 96 Teachers and Classrooms in 33 School Samples

| | Suburban | Mid-city | Inner city | Great Cities | |
|---|---|---|---|---|---|
| Number of Schools: | 10 | 10 | 10 | 3 | = 33 |
| Number of Teachers: | 28 | 26 | 27 | 15 | = 96 |
| Homeroom | 14 | 17 | 16 | 6 | |
| Platoon | 10 | 8 | 8 | 4 | |
| Special | 4 | 1 | 3 | 5 | |
| Totals: | 28 | 26 | 27 | 15 | |

| Number of Classes: | Homeroom | Platoon | Special | |
|---|---|---|---|---|
| | 53 | 30 | 13 | = 96 |
| (Combined Inner-Great Cities) | 22 | 12 | 8 | = 42 |

The number of separate groups of children were not computed due to inclusion of platoon classes in which teachers were in charge of several groups of pupils during the total taping time.

Only one category in the total instrument revealed significant variance between group mean scores in the analysis of these geographical entities. This category dealt with the Problem-Solving and/or Interpretation teaching style and showed the value of the F-ratio at 2.84 or the .05 level of significance. This single instance of significant difference in teacher sample group means occurred in only one comparison and is presented in the Variance Table 9A-2.

Findings and Conclusions:

1. A t- test score of 2.67, significant at the .05 level, showed the Mid-city teacher sample scoring significantly higher in use of Problem- Solving/ Interpretive teaching style when compared with the Inner city teacher group. Investigation of the data revealed that neither Science nor Mathematics teachers were in the majority in either of these Inner or Mid-city locations which might account for the dominant methodological 'style' presumed to be emphasized in Science or Mathematics

teaching; two Math teachers were located in the Inner city sample; two Science and one Math teacher (s) were located in the Mid-city teacher group. Thus subject area predominance did not seem to account for these differences.

TABLE 9A-2
VARIANCE TABLE OF SIGNIFICANT RESULTS IN SCHOOL
SOCIO ECONOMIC GEOGRAPHICAL DATA

| Variable Scores<br>Category 13<br>TEACHER PROBLEM-SOLVING/<br>INTERPRETATION STYLE | 1<br>Great Cities | 2<br>Inner city | 3<br>Mid-city | 4<br>Suburban |
|---|---|---|---|---|
| Group Means | | | | |
| 1 Great Cities 35.35 | | | | |
| 2 Inner city 32.05 | | | t= -2.67* | |
| 3 Mid-city 45.03 | | | | |
| 4 Suburban 36.64 | | | | |

VARIANCE TABLE 9A-2

| Source of Variation | df | Mean Square | | F-Ratio |
|---|---|---|---|---|
| Between groups | = 3 | 782.30 | | |
| Within groups | =92 | 275.84 | $F = \frac{782.30}{275.84} =$ | 2.84* |
| Total | 95 | | | |

df= 93. $F_{(3/90,.01)}$= 4.01** $F_{(3/90,.05)}$= 2.71*

df= 27 + 26 - 2 = 51. t(.01)= 2.68** t(.05)= 2.01*

2. In no other aspect of the study were significant differences shown in differing socio-economic-geographical comparisons and this one difference in "teaching style" occurred between two teacher groups only.

3. There were no significant differences among pupil sample groups.

It is concluded that no major differences existed, with this one exception, among differing school environments in teacher-pupil interactions measured.

## Organizational Plan Data
## Homeroom, Platoon/content and Special classes

Sample:

In similar fashion, these data are also analyzed in terms of the types of organizational plan of the classrooms as found in these urban schools. The "Detroit" Plan, or platoon/content sections of classes, is still prevalent in spite of the trend toward a predominance of elementary school homeroom, or self-contained classrooms, and the newly attempted "primary ungraded plan" for this metropolitan area put into effect in many Detroit schools during the 1964-65 academic year.

Comparisons were made between these types of classes designated by the principals and the project director as (1) homerooms- where one teacher teaches all, or the majority of the academic classes to one grade of students for all, or at least half of, a day; (2) platoon or content classes- in which one teacher teaches a content subject (usually Mathematics, Science, Social Studies, Auditorium or the like) to various groups of students during the day for shorter periods of approximately 40-50 minutes per class; and (3) special classes which include classes in remediation in areas of Speech Correction, Remedial Reading, Mathematics; compensatory education such as "Enrichment" classes; and classes for children designated as "mentally retarded", "emotionally disturbed", "trainable", or "deaf".

The largest numbers of significant variances in all six groupings of the total study (race, sex/race, geographical, organizational plans I and II, and Great Cities Program School samples) occurred in these samples of organizational plan I: Homeroom, Platoon and Special classes sample groups. Those comparisons in which significant results appeared are shown in the tables for this section. Categories in which such significant differences were revealed include those of Teacher Leadership; Pupil Leadership; Teacher Assistance; Teacher Mobility; Pupil Question-Answer-Use of Text, Workbook- Recitation responses; Teacher Demonstration- Manipulation-Illustration; Teacher Supplemental-Enriched-Individualized styles; Teacher Positive Verbal and Teacher Quotient Score. It should be noted the majority of these categories are concerned with differences between teacher groups.

Table 10A-1 presents the leadership category for both teacher and pupil sample groups. Groups are identified as Homeroom, Platoon and Special classes with means, main trend (positive or negative direction from the grand mean) and results of t- tests of significant differences necessitated by the significant values of the F-ratios. All tables contain similar data, in this section, and all tables read from left to right when compared with groups in Columns 1,2 and 3 of the tables. Findings will be discussed with each table with conclusions and implications at the end of this section. Values consistent in the statistical presentations for these samples throughout this comparison of Homeroom, Platoon and Special classes samples are as follows:

$F_{(2/90,.01)} = 4.85^{**}$ $F_{(2/90,.05)} = 3.10^{*}$

Homeroom-Platoon df=81. t(.01)=2.64**(.05)=1.99*
Homeroom-Special df=64. t(.01)=2.66**(.05)=2.00*
Platoon- Special df=45. t(.01)=2.71**(.05)=2.02*

### TABLE 10A-1
### VARIANCE TABLE OF SIGNIFICANT LEADERSHIP INTERACTIONS: HOMEROOM, PLATOON AND SPECIAL CLASSES SAMPLES

Variable Score Category 1 TEACHER LEADERSHIP

| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 94.62 | 4.00 | | | |
| 2 Platoon | 74.75 | -15.88 | t=-2.96** | | t=-2.95** |
| 3 Special | 106.93 | 16.30 | | | |

Variable Score Category 2 PUPIL LEADERSHIP

| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 31.66 | 5.53 | | | |
| 2 Platoon | 17.67 | -8.46 | t=-3.11** | | |
| 3 Special | 21.15 | -4.98 | | | |

VARIANCE TABLE 10A-1

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 5623.97 | |
| Within groups = | 93 | 957.40 | 5.87** |
| Total | 95 | | |

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 1938.44 | |
| Within groups = | 90 | 341.00 | 5.68** |
| Total | 92 | | |

*Findings:*

1. Highly significant variances between groups in both teacher and pupil samples in the category of leadership were identified by the value of the F-ratios of 5.87 and 5.68, respectively, in these Homeroom, Platoon and Special classes comparisons.

Subsequent t- tests, in the teacher sample, indicated differences in the independent group means with the Homeroom teacher sample evidencing significantly higher mean scores in Leadership (at the .01 level) than Platoon teacher mean scores; the Special classes teacher group also showed significantly higher mean scores in Leadership (at the .01 level) than did the Platoon teacher sample.

2. Pupil samples in these same Homeroom classes evidenced significantly higher mean scores in Leadership (at the .01 level) than did pupils in the Platoon sample.

TABLE 10A-2
VARIANCE TABLE OF SIGNIFICANT TEACHER
ASSISTANCE AND MOBILITY INTERACTIONS:
HOMEROOM, PLATOON AND SPECIAL CLASSES

| Variable Score Category 5 TEACHER ASSISTANCE | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 82.17 | - 9.13 | | | t=-3.33** |
| 2 Platoon | 93.07 | 1.77 | | | |
| 3 Special | 122.21 | 30.91 | | | |

| Variable Score Category 7 TEACHER MOBILITY | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 113.64 | -13.21 | | | t=-3.58 |
| 2 Platoon | 127.52 | .66 | | | |
| 3 Special | 175.50 | 48.65 | | | |

VARIANCE TABLE 10A-2

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 8944.27 | |
| Within groups = | 93 | 1653.11 | 5.41** |
| Total | 95 | | |

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 21197.52 | |
| Within groups = | 93 | 3251.26 | 6.52** |
| Total | 95 | | |

The results from two categories shown in Table 10A-2 are both included in the Classroom Activities section and deal with differences in teacher samples in mean scores of Teacher Assistance to pupils and Teacher Mobility in the classroom in these organizational plan groups.

Findings:

1. F-ratio values of 5.41 for Teacher Assistance and 6.52 for Teacher Mobility were both at highly significant levels (.01) indicating extreme variances and use of Fisher t- tests. The t- tests indicated highly significant differences with the Special classes teacher sample scoring higher mean scores in Assistance to pupils than Homeroom teacher groups to their pupils.

2. In Teacher Mobility, or movement within the classroom, this Special classes teacher group was also evidencing significantly higher mean scores than were Homeroom teacher samples ( at the .01 level).

Significant results in the Teaching style-Pupil responses section of the instrument are shown in Table 10A-3 for the Pupil Question-Answer-Use of Text,Workbook-Recitation response category, the Teacher Demonstration-Manipulation-Illustration category and the Teacher Supplemental-Enriched-Individualized style areas. For brevity, these three "style-responses" categories of the same section are included in the following table:

### TABLE 10A-3
### VARIANCE TABLES OF SIGNIFICANT TEACHING STYLE-PUPIL RESPONSE INTERACTIONS: HOMEROOM, PLATOON AND SPECIAL CLASSES

Variable Score
Category 12
PUPIL QUESTION-ANSWER-USE OF TEXT, WORKBOOK-RECITATION RESPONSE

| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 72.68 | 6.65 | | t=2.18* | t=2.71* |
| 2 Platoon | 59.07 | - 6.96 | | | |
| 3 Special | 55.29 | -10.75 | | | |

VARIANCE TABLE 10A-3

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 2682.32 | |
| Within groups = | 93 | 698.09 | 3.84* |
| Total | 95 | | |

Variable Score
Category 15
TEACHER DEMONSTRATION-MANIPULATION-ILLUSTRATION TEACHING STYLE

| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 29.77 | -4.72 | | t=-3.50** | |
| 2 Platoon | 41.00 | 6.51 | | | |
| 3 Special | 38.86 | 4.37 | | | |

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 1337.50 | |
| Within groups = | 93 | 258.61 | 5.17** |
| Total | 95 | | |

Variable Score
Category 17
TEACHER SUPPLEMENTAL-ENRICHED-INDIVIDUALIZED STYLE

| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 79.21 | -7.81 | | | t=-3.19** |
| 2 Platoon | 83.90 | -3.12 | | | t=-2.16* |
| 3 Special | 123.07 | 36.05 | | | |

VARIANCE TABLE 10A-3

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 10856.81 | |
| Within groups = | 93 | 2025.27 | 5.36** |
| Total | 95 | | |

Findings:

1. The value of the F-ratio at 3.84 in the Pupil Question-Answer-Use of Text, Workbook-Recitation category necessitated the employment of the t- test to specify significant differences among the compared groups. The t- scores of 2.18 and 2.71, respectively, identified the Homeroom pupil sample group as obtaining higher mean scores (at the .05 level) significantly different from either Platoon or Special classes pupil groups.

2. Highly significant variances may be noted in the Teacher Demonstration-et. al. category with the value of the F-ratio = 5.17 and a resulting t- test score of 3.50. These highly significant differences at the .01 level showed the Platoon classes teacher group scoring significantly higher mean scores in use of the Demonstration-Manipulation-Illustration teaching style than mean scores of the Homeroom teacher sample.

3. Another area of differences revealed in teaching styles was that of the Teacher Supplemental-Enriched-Individualized provisions for pupils. The F-ratio value of 5.36 indicated highly significant variance and employment of the t- test revealed the Special classes teacher group scoring with significantly higher mean scores than were either of the other two teacher samples. Compared with Homeroom teachers, the Special classes teacher group showed significant differences at the .01 level; compared with the Platoon teacher group, the Special classes teacher group showed differences at the .05 level of significance.

In the Emotional Climate of the Classroom section, significant variance in mean scores in the Teacher Positive Verbal area occurred, as shown in Table 10A-4 below:

TABLE 10A-4
VARIANCE TABLE OF SIGNIFICANT EMOTIONAL CLIMATE
INTERACTION-HOMEROOM, PLATOON AND SPECIAL CLASSES

Variable Score
Category 25 — 1 HR, 2 PL, 3 SP
TEACHER POSITIVE VERBAL

| Group | Group Mean | Main Trend | |
|---|---|---|---|
| 1 Homeroom | 126.28 | - 5.73 | t=-2.29 |
| 2 Platoon | 134.52 | - 7.49 | t=-2.21 |
| 3 Special | 171.21 | 37.20 | |

VARIANCE TABLE 10A-4

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups | 2 | 11972.32 | |
| Within groups | 53 | 3603.70 | 3.16* |
| Total | 55 | | |

Findings:

1. The F-ratio value in the Teacher Positive Verbal category of 3.16 was significant at the .05 level and indicated that t- tests for significant differences should be conducted. The Special classes teacher sample, in comparisons with both Homeroom and Platoon teacher samples, scored significantly higher mean scores in the Positive Verbal category.

2. No other significant differences in any category of the Emotional Climate section appeared among teacher or pupil samples.

As a final assessment of interactions among these Homeroom, Platoon and Special classes samples, the final category which showed significant differences between independent group means was that of Teacher Quotient Scores. In an attempt to summarize the total or generalized positive interactions of sample groups, the following procedures were used to derive a composite or "Quotient Score".

1. For each teacher and each pupil group (n= 56) the sums of all "negative value" categories, as judged to be educationally undesirable interactions and indicated by a * symbol, were subtracted from the sums of all other categories for the individual teacher and pupil group deemed to be "educationally acceptable" interactions in the classroom.

2. The resultant scores, entitled "Quotient Scores", were considered as indicative of the amounts of interaction-occurrences weighted through the process of subtracting the amounts of negative interactions.

An example of scoring for an individual teacher and her classroom group to obtain a "Quotient Score" is illustrated in Table 10A-5. The Quotient Scores for each individual teacher and each classroom group were then used as data to determine group mean scores in the category entitled "Quotient Score" to indicate proportionate amounts of acceptable interaction occurrences.

### TABLE 10A-5
### PROCEDURES FOR DERIVATION OF TEACHER-PUPILS' QUOTIENT SCORES

Teacher # 14

| CATEGORY | Sum of Incidents in Category<br>Teacher | Pupils |
|---|---|---|
| CLASSROOM ACTIVITIES | | |
| Leadership | 145 | 16 |
| Participation | 127 | 52 |
| Assistance | 47 | 12 |
| Mobility | 93 | 23 |
| Restriction* | - 3 | - 2 |
| TEACHING STYLE PUPIL RESPONSES | | |
| Lecture, Question, Answer, Text, Workbook, Recitation | 103 | 55 |
| Problem-Solving/Interpretation | 7 | 3 |
| Demonstration, Manipulation, Illustration | 37 | 10 |
| Supplemental, Enriched, Individualized | 68 | 16 |

Classroom Group # 14

| CATEGORY | Sum of Incidents in Category<br>Teacher | Pupils |
|---|---|---|
| SENSORY EMPHASIS | | |
| Aural-Oral | 0 | 2 |
| Visual | 11 | 10 |
| Kinesthetic/Tactile | 4 | 2 |
| EMOTIONAL CLIMATE OF THE CLASSROOM | | |
| Positive Verbal | 88 | 10 |
| Negative Verbal* | -19 | - 1 |
| Positive Physical | 36 | 29 |
| Negative Physical* | - 2 | 0 |
| Positive Covert | 20 | 26 |
| Negative Covert* | - 1 | 0 |
| Punitive-Disruptive* | 0 | - 1 |
| USES OF MATERIALS | 11 | 11 |
| Sum= QUOTIENT SCORE: | 772 | 273 |

* Judged as "negative value" categories.

Table 10A-6, from these procedures, shows the significant variance in Teacher Quotient Scores between Homeroom, Platoon and Special classes teacher samples.

### TABLE 10A-6
### VARIANCE TABLE OF SIGNIFICANT QUOTIENT SCORE INTERACTIONS AMONG HOMEROOM, PLATOON AND SPECIAL CLASSES SAMPLES

Variable Score- Category 39
TEACHER QUOTIENT SCORES

| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
|---|---|---|---|---|---|
| 1 Homeroom | 856.42 | -50.30 | | | t=-2.71** |
| 2 Platoon | 888.72 | -17.99 | | | t=-2.06* |
| 3 Special | 1134.43 | 227.71 | | | |

VARIANCE TABLE 10A-6

| Source of Variation | | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 2 | 434714.50 | |
| Within groups = | 93 | 100926.50 | 4.31* |
| Total | 95 | | |

Findings:

1. The F-ratio value of 4.31 indicated significant variability between groups at the .05 level and subsequent t- tests located highly significant differences between the mean Quotient score of the Special classes teacher sample and the Homeroom teacher sample at the .01 level of significance; and between the Special classes teacher group and the Platoon teacher group at the .05 level of significance. In both instances of comparison the Special classes teacher group showed a significantly higher group mean score in over-all "acceptable" interactions than the mean scores of the Homeroom or Platoon teacher samples.

Summary of Findings: Homeroom, Platoon and Special Classes sample groups

1. In each instance of comparison of the Special classes teacher group resulting in significant or highly significant differences between independent group means, the Special classes teacher sample showed significantly more amounts of positive interaction.

2. When compared with Platoon teacher samples, the Special classes teacher group scored significantly higher group means in categories of Leadership, uses of Supplemental teaching style, Positive Verbal interaction with pupils and over-all Quotient scores.

3. When compared with Homeroom teacher groups, these Special classes teachers showed differences at the .01 level in higher mean scores in Assistance to pupils, in Mobility in the classroom, in uses of Supplemental et.al. activities and had significantly higher mean Quotient scores. At the .05 level the Special classes teacher sample also showed significantly higher mean scores in amounts of Positive Verbal interaction with students; all results favoring the Special classes teacher group.

4. Platoon class teacher samples, at the .01 level, scored a significantly higher mean score than Homeroom teachers in amounts of Demonstration teaching style. This was the only category favoring this group when compared with others.

5. The only category of highly significant differences in mean score in which Homeroom teacher samples scored more positively than either of the other groups of teachers was in the category of Teacher Leadership.

6. Pupil samples showed two areas of differences: (a) Homeroom pupils showed highly significant differences between means, at the .01 level, in Pupil Leadership when compared with Platoon pupil samples and (b) at the .05 level showed higher mean scores in the Recitation response category than did either Platoon or Special classes student samples.

A major conclusion regarding samples classified into these particular organizational plans is that the data revealed significant differences in several discrete categories as well as the obvious pattern of more highly positive interactions in the Special classes teacher sample when compared with other teacher samples.

## Organizational Plan Data: Graded and Ungraded Classes

Sample:

Current plans for the implementation of the "primary ungraded" plan, proposed in the Detroit Public School system beginning with the 1964-65 academic year, led to an analysis of graded compared with ungraded classrooms in this study.

1. Classes were identified as "ungraded" if they included children who were of differing chronological ages (more than a two-year span) in the same class; if labelled as "ungraded" through achievement, mental or physical measurement tests (such as Remedial, Special A or B, Junior Ungraded, Speech Correction, or "emotionally disturbed", etc.); or if curricular plans or teaching, by design, included provisions for differing grade or ability levels within the total class (as distinct from 'academic grouping' in one subject, such as reading, by individual teachers).

2. Classes were specified as "graded" if they included children who were within the usual age range chronologically (less than a two-year span) commensurate with the particular grade; if curricular experiences were presented generally for the whole class without obvious preparation for groups or individuals; or if children were classified as in a particular grade (i.e., 3rd Grade, Kindergarten, etc.).

A total of 78 "graded" and 18 "ungraded" classes accounted for the total 96 classrooms involved in the study. Thirteen "special" classes and five "primary ungraded" classes met the criteria for the first classification described previously. Because the study was concerned with interaction, rather than achievement or cognitive measures, these measures of classroom interaction should verify the "special classes" data previously presented as well as explore differences in "graded" and "ungraded" organizational plans. The analytical presentation shown is similar to previous analyses and presents those results of significant differences in the following tables.

Table 11A-1 is concerned with significant results in four teacher sample categories: Teacher Mobility; Teacher Supplemental-Enriched-Individualized teaching style; Teacher Positive Verbal and Teacher Punitive categories. The values of each of the F-ratios presented were significant at the .05 level and indicated the necessity of applying t- tests in order to identify the higher mean scores among the different teacher samples in these areas.

TABLE 11A-1
VARIANCE TABLES OF SIGNIFICANT TEACHER INTERACTION CATEGORIES:
GRADED AND UNGRADED CLASSROOM SAMPLES

Variable Score-Category 7
TEACHER MOBILITY[1] — 2 Ungraded

| Group | Group Mean | Main Trend | t |
|---|---|---|---|
| 1=Graded | 113.87 | - 7.03 | t=-2.46 |
| 2=Ungraded | 157.33 | 30.48 | |

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 20380.47 | |
| Within groups = | 94 | 3448.74 | 5.91* |
| Total | 95 | | |

Variable Score-Category 17
TEACHER SUPPLEMENTAL-ENRICHED-INDIVIDUALIZED TEACHING STYLE[1] — 2 Ungraded

| Group | Group Mean | Main Trend | t |
|---|---|---|---|
| 1=Graded | 82.29 | - 4.93 | t=-2.18 |
| 2=Ungraded | 108.33 | 21.37 | |

VARIANCE TABLE 11A-1

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 33925.30 | |
| Within groups = | 94 | 7127.11 | 4.76* |
| Total | 95 | | |

Variable Score-Category 25
TEACHER POSITIVE VERBAL[1] — Ungraded

| Group | Group Mean | Main Trend | t |
|---|---|---|---|
| 1=Graded | 135.43 | -6.40 | t=-2.17 |
| 2=Ungraded | 169.72 | 27.71 | |

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 17052.51 | |
| Within groups = | 94 | 3635.34 | 4.69* |
| Total | 95 | | |

Variable Score-Category 38
TEACHER PUNITIVE[2] — Ungraded

| Group | Group Mean | Main Trend | t |
|---|---|---|---|
| 1=Graded | 3.95 | .43 | t=2.18 |
| 2=Ungraded | 2.21 | -1.31 | |

VARIANCE TABLE 11A-1

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 31.95 | |
| Within groups = | 54 | 6.73 | 4.75* |
| Total | 55 | | |

[1] $F_{(1/90,.01)}$= 6.92** $F_{(1/90,.05)}$=3.95* [2] $F_{(1/50,.01)}$=7.17** $F_{(1/50,.05)}$ = 4.03*

t 1=94-2= df 93. t(.01)=2.63** t(.05)=1.99*

t 1=55-2= df 54. t(.01)=2.68** t(.05)=2.01*

Findings and Conclusions:

1. Reading the tables of variance from left to right, in each instance of comparison of the Graded teacher sample with the Ungraded teacher sample, the Graded teacher group scored significantly lower mean scores in Mobility about the classroom, in Supplemental et. al. teaching style, in Positive Verbal interaction with pupils and showed significantly higher mean score in the Punitive behavior category - all at the .05 level of significance.

2. These significant results in the above categories parallel the significant differences in mean scores found in the Homeroom, Platoon and Special classes teacher sample in categories of Mobility, Supplemental style and Positive Verbal behaviors but do not repeat the differences of means found in areas of Leadership, Assistance and teacher use of the Demonstration teaching style.

3. Unlike the Homeroom, Platoon and Special classes pupil samples, these pupil groups showed no significant differences in mean scores despite the distinctions of achievement, mental or physical measurement placement.

## Great Cities School Improvement Program Schools Data

Sample:

As a test of instrument sensitivity in two schools of almost identical program, location and staff make-up, and to discover if measurable differences existed in these Great Cities Program schools, two of the three "Great Cities" schools of the study were selected for comparison.

These schools were chosen primarily because (1) both had been original Great Cities School Improvement Program schools from the inception of the program in Detroit; (2) equal numbers of teachers had been recommended and had volunteered for the study from each school; (3) numbers of men and women teachers with the 'counterpart' school were nearly equal; (4) racial numbers of teachers in each school were equal; (5) each of the schools served approximately the same total number of students and were compatible in terms of being in the same "inner city" geographical and socio-economic location; and (6) because pupil samples were of differing races with the majority of pupils at School I of the Caucasian race (75% or more) and the majority of pupils at School II of the Negro race (75% or more).

Table 12A-1 illustrates the numbers, sexes, races, grade levels, subject areas and organizational plan of these 14 sample teacher and pupil populations. Significant results in the data from these two comparisons are presented in the following variance tables with t- test results indicated. These results include a listing of the mean scores and main trends of positive or negative direction of the mean score from the grand mean for interpretive purposes in identifying patterns and implications in these comparisons.

The values of the F-ratios in the categories of Teacher Participation, Pupil Mobility and Teacher Punitive behaviors are shown to be beyond the .05 level of significance and an F-ratio value significant at beyond the .01 level in Teacher Problem-Solving/Interpretive teaching style identified areas of significant variance of the group means in these two Great Cities schools samples, as shown in Table 12A-2. The values consistent in the statistical presentations for these samples throughout this comparison of the Great Cities samples are as follows:

$F_{(1/12,.01)} = 9.33^{**}$ $F_{(1/12,.05)} = 4.75^{*}$

t 7 + 7 - 2 = df 12. t(.01)= 3.06** t(.05)= 2.18*

## TABLE 12A-1
## TEACHER DISTRIBUTION AND PUPIL SAMPLES IN TWO GREAT CITIES PROGRAM SCHOOLS

| GREAT CITIES SCHOOL I CAUCASIAN PUPILS | | | | | | GREAT CITIES SCHOOL II NEGRO PUPILS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Teacher # | Sex | Race | Subject Area | Organizational Plan I | Plan II | Teacher # | Sex | Race | Subject Area | Organizational Plan I | Plan II |
| 1 | F | C | Special B | Special | Ungraded | 1 | F | C | Grade 2 | Homerm | Graded |
| 2 | F | C | Special B | Special | Ungraded | 2 | F | N | Grade 4 | Homerm | Graded |
| 3 | F | C | Grade 4 | Homerm | Graded | 3 | F | N | Kg | Homerm | Graded |
| 4 | F | N | Grade 1 | Homerm | Graded | 4 | F | N | Remedial Reading | Special | Ungraded |
| 5 | F | N | Kg- 1 | Homerm | Ungraded | 5 | M | C | Science | Platoon | Graded |
| 6 | M | N | Special B | Special | Ungraded | 6 | M | C | Art | Platoon | Graded |
| 7 | M | N | Science | Platoon | Graded | 7 | M | N | Soc.St. | Homerm | Graded |

n= 7 (5 Females; 2 Males)
4 Negro; 3 Caucasian teachers

n= 7 (4 Females; 3 Males)
4 Negro; 3 Caucasian teachers

Grade/Subject Areas: Kg- one in each school; Grade 1-School I; Grade 2- School II; Grade 4- one in each school; Science- one in each school; Special B- three in School I; Art- School II; Remedial Reading- School II; Social Studies- School II= 14 classrooms.

Organizational Plans: Homeroom- 3 in School I;4 in School II Graded- 3 in School I
Platoon- 1 in School I;2 in School II 6 in School II
Special- 3 in School I;1 in School II Ungraded-4 in School I
1 in School II

## TABLE 12A-2
## VARIANCE TABLES OF SIGNIFICANT TEACHER- PUPIL INTERACTION CATEGORIES: GREAT CITIES SCHOOLS SAMPLES

Variable Score-Category 3
TEACHER PARTICIPATION

| Group | Group Mean | Main Trend | School II |
|---|---|---|---|
| School I | 169.00 | 26.93 | t=2.54* |
| School II | 116.00 | -26.93 | |

Variable Score-Category 8
PUPIL MOBILITY

| Group | Group Mean | Main Trend | School II |
|---|---|---|---|
| School I | 109.71 | 27.57 | t=2.48* |
| School II | 54.57 | -27.57 | |

VARIANCE TABLE 11A-2

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 10152.07 | |
| Within groups = | 12 | 1568.57 | 6.47* |
| Total | 13 | | |

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 10642.57 | |
| Within groups = | 12 | 1724.10 | 6.17* |
| Total | | | |

(See Next Page for Remainder of Table)

TABLE 12A-2 (continued)
VARIANCE TABLES OF SIGNIFICANT TEACHER- PUPIL INTERACTION
CATEGORIES: GREAT CITIES SCHOOLS SAMPLES

Variable Score- Category 13
TEACHER PROBLEM-SOLVING/
INTERPRETIVE STYLE

| Group | Group Mean | Main Trend | School II |
|---|---|---|---|
| School I | 42.14 | 10.21 | t=3.81* |
| School II | 21.71 | -10.21 | |

Variable Score- Category 38
TEACHER PUNITIVE$^{a}$*

| Group | Group Mean | Main Trend | School II |
|---|---|---|---|
| School I | 1.60 | - 2.04 | t= -2.91* |
| School II | 5.33 | 2.04 | |

VARIANCE TABLE 11A-2

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 1460.64 | |
| Within groups = | 12 | 100.52 | 14.53** |
| Total | 13 | | |

| Source of Variation | df | Mean Square | F-Ratio |
|---|---|---|---|
| Between groups= | 1 | 38.01 | |
| Within groups = | 9 | 4.50 | 8.44* |
| Total | 10 | | |

Findings and Conclusions:

1. In the category of Teacher Participation, the group mean of the teacher sample in School I was significantly higher than the School II sample mean.

2. Pupil samples in School I showed a mean score indicating significantly higher amounts of Mobility in the classroom than pupil group mean score in School II.

3. Highly significant differences between group means were evidenced in the Problem-Solving/Interpretive style with t- test results at beyond the .01 level in favor of the School I teacher sample.

4. The School I teacher sample also revealed differences between means in lack of Teacher Punitive behaviors (at beyond the .05 level), scoring significantly less in this negative area than the School II teacher sample.

5. In each instance of significant group mean differences between samples in School I and School II, results showed the School I sample interacting more positively in these cited categories.

In these two similar Great Cities schools, the observational instrument and scoring procedures were apparently sensitive enough to detect interaction differences although no reasons are advanced as to causes for these differences. It is concluded that teacher race or sex considerations, socio-economic-geographical location or material and curricular provisions were not influencing factors since these were selected as bases of similarities between the two schools. These results also verify the findings in the previous section regarding race, sex, and socio-economic-geographical samples.

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$^{a}F_{(1/9,.01)} = 10.56^{**}$ $F_{(1/9,.05)} = 5.12^{*}$ t 7 + 7 - 2= df 12. t(.01)=3.06**
t(.05)=2.18*

*See text, pages 29-30 for rationale regarding the "negative value" categories. Scores are interpreted inversely; i.e., the lower the score, the more positive the interaction is judged to be.

## TRENDS AND IMPLICATIONS

Emphasizing that few values revealed significant differences among teacher or pupil samples in the race, sex/race, and socio-economic-geographical data in separate categories, it should be noted that interpretation of trends or patterns of total interaction from this descriptive study may lead to implications for further research by posing pertinent questions.

In consideration of over-all interaction trends among groupings of the study, a listing of all categories was compiled for each of the groupings with group means and main trends (positive or negative direction from the grand mean) indicated. These data are shown in Appendix F in Tables 13A-1 through 13A-5. Symbols were assigned to mean scores as follows: the highest, or most positive, group mean was designated by a ++ symbol; the next highest by a +; the less positive group mean was indicated by a - symbol; and the least positive score by a -- symbol. Where groups of three samples were compared, only the + and the - symbols were used; in groups of two comparisons, only the + and the - symbols were employed. No attempt was made to weight these scores but the purpose of this presentation was to identify those teacher-pupil samples consistently scoring highest or lowest mean scores from the grand mean in the majority of the discrete categories for an overall interpretation of trends for further study.

As shown in Tables 13A-1 through 13A-5 of Appendix F, group means and main trends relative to direction from the grand mean are presented. Categories with mean scores of an "educationally negative" value, by judgment[1], are interpreted inversely (i.e., the lower the score, the more positive the interaction was judged to be). It should also be remembered that, consistent with the previous presentations, group designations indicate teacher sample/ pupil sample, respectively.

### Teacher Race- Pupil Race Data Trends

Classroom Activities section:

1. In the data pertaining to racial combinations of teacher- pupil samples, shown in Table 13A-1, the N/C sample in column 4 showed the highest mean scores in Teacher Leadership, Pupil Participation, Pupil Assistance, Teacher and Pupil Mobility, and the least Teacher (self) Restriction. The N/C sample showed the highest mean scores of the four groups under study in six of the 10 categories of this section.

2. In column 1, the C/C sample scored the highest mean scores in Teacher Participation and Teacher Assistance.

3. It should be noted here that both of these former pupil samples were composed of Caucasian students, predominantly.

4. In column 2, the N/N pupil sample scored the highest mean score in Pupil Leadership.

5. The C/N sample group showed no high mean scores in any category and revealed the lowest mean scores in Pupil Participation, Teacher and Pupil Assistance, and Teacher and Pupil Mobility. The C/N group showed the lowest mean scores in five of the 10 Classroom Activities categories.

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[1] Whenever the symbol * appears after a category title, the situation is considered generally negative. However, figures that appear in the tables might tend to leave the impression of a positive situation due to high numerical scores; thus, in order to alert the reader to the fact that high values in such situations are judged to be "educationally undesirable" the symbol * is employed in categories of Restriction, Negative Verbal, Negative Physical, Negative Covert and Punitive-Disruptive categories.

6. It should be noted that these two latter pupil samples were composed of Negro pupils, predominantly.

Sensory Emphasis section:

1. The N/N sample, in column 2 of Table 13A-1, were consistently higher in mean scores in these three categories of Aural-Oral, Visual, and Kinesthetic/Tactile uses of materials than were the other three samples with the exception of higher Pupil Aural-Oral responses in the C/N group.

2. The C/C sample group, in column 1, were showing low mean scores in the majority of the Sensory Emphasis categories.

3. It should be noted that pupils in the samples with low mean scores in the majority of these categories were Caucasian pupils, predominantly.

Teaching styles- Pupil responses:

1. The N/C sample, in column 4, again revealed higher group mean scores in the Lecture-Recitation category by both teachers and pupils, in Teacher Problem-Solving/Interpretive style and Teacher and Pupil Supplemental _et. al._ categories. The N/C sample showed consistently high and positive mean scores in eight of the 8 teaching style-pupil responses categories.

2. The C/N sample, shown in column 3, consistently scored below the grand mean in all categories of the section of Teaching style-Pupil responses. The lowest mean scores for the C/N group were in categories of Teacher and Pupil Problem-Solving and Teacher and Pupil Supplemental _et. al._ categories.

Implications:

The implications of these "academically oriented" category patterns in which the C/N sample showed below mean scores in 20 of the first 26 categories and in which the N/C group showed above mean scores in 24 of the first 26 categories suggest a cumulative effect in classroom interactions in the racially "unlike" samples not apparent in investigation of discrete categories.

Racially "like" samples (C/C and N/N) showed a more similar total pattern; these C/C and N/N samples showed mean scores in a positive direction from the grand mean in 13 and 14 of these first 26 categories, respectively, and scores in a negative direction in 13 and 12 of the first 26 categories, respectively.

These trends suggest problem areas for further research, as follows:

1. Are, indeed, the "middle-class, white, Anglo-Saxon" values, suggested in the literature as penalizing segments of the public school population, apparent in the poorer showing of the C/N sample?

2. As implied in the trend of the N/C sample, does the Negro teacher "work better" with pupils of a middle-class or white group than does the Caucasian teacher with pupils from a different social class or race than her own?

3. Does striving to maintain, or gain, social class position or mobility affect the interactions of the teacher with pupils?

The contiguous problem of affective relationships of the classroom intensifies the need for further research. Table 13A-1 continues with data from the Emotional Climate section of the instrument for the racial samples.

Emotional Climate of the Classroom:

1. In the teacher categories, in column 1 of Table 13A-1, it may be noted that the C/C sample scored the highest mean scores in six of the seven categories and

above the grand mean score in the seventh category of the Emotional Climate area.

2. The N/C sample showed the highest mean score in one category of this section and above mean scores in four other categories of the Emotional Climate area.

3. These two pupil samples were composed of,predominantly,Caucasian pupils.

4. In general, teacher samples of the Negro pupil groups (N/N and C/N) evidenced lesser mean scores in all empathic categories. The exceptions to the statement occurred in the cases of the N/N group- showing less Negative Physical behavior, and the C/N group- showing less Negative Covert behaviors to pupils by mean score.

Implications:

Such differences in mean scores, while not discretely significant, indicated a strong pattern of a more favorable climate for Caucasian pupil samples than for Negro pupil samples, regardless of the race of the teacher. If this implication can be reaffirmed through further study, it would lend support to the contention of educators in the field of productive thinking that educational models (theories) must take cognisance of the fact that emotion is one of the elements which act to organize experiencing, learning, retention and use of what is learned.

An interesting total pattern change also seemed reflected in the C/N sample, previously identified as tending to be the lowest interacting sample in 2[illegible] of the first 2[illegible] categories. In the Emotional Climate categories the C/N sample of teachers also showed below mean scores in all categories of the section dealing with empathic behaviors with pupils except in the Negative Covert area. The pupils in this C/N group, however, scored as the least negative verbally, the least negative in Physical behavior and the least Disruptive of all the pupil samples. Classroom disciplinary studies substantiate that high positive teacher behavior seems to engender high positive pupil behavior but the high negative teacher behavior in this instance did not seem to be directly related to negative pupil behaviors but manifested rather in lack of pupil positive behaviors with pupil mean scores low in Positive Verbal, Positive Physical and Positive Covert behaviors. The trend of high teacher negativism seemed, therefore, related to a lack of expressive behaviors of either positive or negative character in pupils.

## Socio-Economic-Geographical Data Trends

Due to the descriptive and exploratory nature of the study, a further investigation regarding the overall effect of results of all categories was made for the socio-economic-geographical groupings. Again, there were no significant differences of importance in these differing environmental samples in the discrete categories of teacher or pupil interactions with the exception of the category Pupil Assistance, previously reported.

Questions arise, however, from a consideration of the group means and main trends of group samples in each of these geographical groups in toto. Table 13A-2 presents the total data for these samples, in Appendix F, designated in similar fashion of assigning positive and negative symbols to mean scores for purposes of interpretation of trends. Groupings are listed as GC (Great Cities schools), IC (Inner city schools), MC (Mid-city schools) and SU (Suburban schools) in columns 1,2,3 and 4 of the table. The left half of the table lists the Teacher sample mean scores, main trends and symbols; the right half of the table lists the Pupil sample mean scores, main trends and symbols for each category of the study.

Suburban schools samples:

1. In the section measuring observed Classroom Activities, the suburban school teacher sample, in column 4 of Table 13A-2, showed mean scores in a definite pattern of lowest and least positive interactions in total categories in comparisons with the other three school samples.

2. In teaching styles categories, except that of Problem-Solving et.al., the SU teacher sample was also the lowest and least positive in group mean scores.

3. The SU teacher group had also the lowest mean scores in two of the three Sensory Emphasis categories and the lowest mean score in total Uses of Instructional Materials.

4. Of seven categories of Emotional Climate, the SU sample of teachers revealed the lowest mean scores in five areas and only fractionally above mean scores in the remaining two categories of this section.

5. The predominant pattern of lowest mean scores in 16 of the 20 total categories seemed reflected in the total suburban pupil samples mean scores with the SU pupil sample having the highest mean scores in only two of the 20 categories- those of less Negative Covert and less Disruptive behavior mean scores than the other three groups.

Mid-city samples:

1. The highest and most positive teacher interactions were shown in the mean scores for the majority of the Classroom Activities categories by the Mid-city sample, shown in column 3, with scores highest in four of these five areas.

2. In the teaching styles section this MC teacher group had the highest mean scores in three of these four categories and above mean score in the fourth category.

3. Above mean scores in all categories of the Sensory Emphasis section and highest mean scores in total Uses of Instructional Materials completed the highly positive pattern in this MC sample. Thus, in the first 13 categories, the MC teacher group revealed the highest mean scores in eight categories, above mean scores in four other categories, and only one mean score- that of Teacher Leadership- below the grand mean.

4. In the Emotional Climate section, however, the MC teacher group did not evidence a continuation of the strong positive pattern shown in the former areas. Only three scores in the Emotional Climate categories were positive in nature and in this affective section, the MC teacher sample was surpassed in each of the seven empathy categories by the GC teacher sample.

5. Mid-city pupil samples seemed to reflect this pattern of positive teacher "academic" interaction with the highest positive mean scores in three of the four Classroom Activities categories, in two of four Pupil Responses categories and in one of three Sensory Emphasis areas. Although the MC teacher group scored below grand means in almost all Emotional Climate categories, MC pupil groups obtained the highest mean scores in four of these seven categories for a total of 10 of the 20 highest mean scores in four sections of measurement.

Great Cities samples:

1. The strongest trend of highest positive mean scores shown by the Great Cities teacher sample was in the Emotional Climate section. This GC teacher group scored highest and most positively in each of the seven empathy categories as well as high in lack of (imposed) Restriction on pupils.

2. In Classroom Activities, highest mean scores were obtained by the GC teacher sample in Leadership and high mean scores in Assistance, Mobility and lack of (self) Restriction were also apparent.

3. The GC teacher sample also evidenced the highest mean scores in the Supplemental *et.al.*category and an above mean score in use of the Demonstration *et.al.* teaching style.

4. In two of the three Sensory Emphasis categories mean scores of the GC teacher group were fractionally highest for a total of 11 of the 20 highest category scores.

5. Pupils in the GC sample showed the highest mean scores in Demonstration *et.al.* pupil responses; Visual and Kinesthetic/Tactile responses and total Uses of Instructional Materials as well as the least Negative Physical behavior scores of all pupil samples.

Inner city samples:

1. Teacher samples of the Inner city group scored the highest mean score in only one category- that of Teacher Aural-Oral emphasis.

2. The areas of lowest mean scores of this teacher sample, when compared with the three other geographical groupings, occurred in categories of Problem-Solving *et.al.*, Kinesthetic/Tactile emphasis; lack of Positive Verbal interaction and, *fractionally*, the highest Punitive mean score.

3. Pupil samples in this Inner city classification were highest in mean scores in categories of Leadership and in Question-Answer-Use of Text,Workbook and Recitation responses but lowest of the four groups in Participation and Assistance; Problem-Solving *et. al*, Demonstration and Supplemental *et.al.*responses categories; and Aural-Oral *emphasis* in an apparent reflection of the *lower* teacher interaction mean scores in almost all categories.

4. In empathy areas, the IC pupil sample also revealed the highest mean scores in (imposed) Restriction; higher Negative Verbal, Negative Covert and Disruptive mean scores; and the lowest mean scores in the Positive Covert category.

Implications:

The trends of interaction described above indicate the higher and more positive over-all interactions occurring in the Mid-city and Great Cities teacher samples and in the Mid-city pupil sample. The lower and less positive over-all interaction patterns occurred in the Suburban and Inner city teacher and pupil sample groups.

Major problem areas, identified for research by implication, from these trends suggest investigation of the following questions:

1. The trends of the Mid-city "transitional" area schools of highly positive educational interactions suggest investigation into areas of cognitive interactions: (a) Are such positive 'educational" interactions related to aspects of increasing educational achievement? and (b) Are the less positive empathic relationships, shown in this MC teacher sample, related to these same aspects of educational achievement?

2. The outstanding pattern of positive empathic relationships of teachers in the GC sample are in opposition to the patterns of affectivity in both the IC and SU teacher groups. (a) Are "personality attributes" of the higher interacting group different from those of the lower interacting teacher groups? (b) Are teacher preferences for teaching location a factor in these affective relationships? (c) Are particular criteria for teacher selection and/or placement employed and are these related to affective factors in teaching relationships?

Contradictory patterns of interaction totality are discernible in the financially sounder school settings; i.e., the suburban schools, generally well-supported and equipped by financially interested and cooperative parent efforts and the Great Cities schools, aided with additional Foundation monies and staff efforts. The GC teacher sample evidenced a pattern of high positive affectivity and uses of supplemental-individualized provisions for pupils; the SU teacher sample [illegible] revealed less total overall positive interaction in almost every category measured. This implication supports the statement of this report on page 3: "Whatever alterations are made in the organization, materials and/or services of the schools ... the most important knowledge necessary is that regarding the teachers and their pupils." Highly and significantly positive correlations between teacher behaviors and pupil behaviors have been presented and are reflected in the patterns of the mid-city teacher and pupil sample as well as the negative trends of the suburban and inner city teacher and pupil samples. Current reports of the "exodus" to suburbia" criticize the rapid trend toward conformity and insulative social patterns claimed to affect pupils in suburban developments. The descriptive patterns of the suburban school sample, shown as surprisingly poor in the measures of the study, would seem to have bearing in this matter. The total interaction pattern for the Inner city sample, also, as described from this trend data, is obviously in direct contradiction to the needs of these pupils, as found in studies regarding economically and culturally disadvantaged inner-city pupils.

Studies of controlled activities, methodologies, materials use and affective elements in the classroom are sorely needed to verify or refute effects of classroom relationships in order to implement practices of "quality" education in schools. Exploratory studies cannot presume to be conclusive but serve the purpose of focusing attention on critical and controversial areas.

## Organizational Plan Data Trends: Homeroom, Platoon and Special classes

The data included in Table 12A-3 of Appendix F for the Homeroom, Platoon and Special classes samples strongly refutes a general educational hypothesis advanced by some educators that the "homeroom" plan is "superior" to other types of grouping plans for a variety of reasons- some in the affective area.

Homeroom samples:

1. Extremely low mean scores (.01 level) were indicated in three of the Classroom Activities categories and lowest scores in the remaining two categories of this section were obtained in the Homeroom teacher sample.

2. In the teaching styles section, significantly lower (.01 level) mean scores were revealed in two of these four categories and the lowest mean score of the three groups occurred in the Problem-Solving et.al. category for this HR teacher sample. Only in the Lecture-Recitation area did the HR sample show a mean score higher than the other teacher groups.

3. Below mean scores were also shown in all categories of the Sensory Emphasis section for the HR teacher group.

4. In the Emotional Climate categories, the HR teacher group scored significantly lower (.05) than one sample in Positive Verbal interaction and scored either lowest or below grand mean scores in five of the total seven Emotional Climate section categories.

5. In total Uses of Instructional Materials, the HR teacher sample scored fractionally below the grand mean score.

6. Of the total 20 categories, the HR teacher sample scored lowest in 14 of these categories. The Quotient score for the HR teacher group was at a significantly low level when compared with Special classes and Platoon teacher samples.

7. Homeroom pupil groups showed only three areas of high mean scores: significantly (.01) more Leadership, significantly (.05) more Recitation responses, and highest mean score in Positive Physical behavior of the three groupings. In 16 other categories this pupil sample scored below the grand mean or only fractionally above grand mean.

Platoon classes samples:

1. Teacher groups in the Platoon classes samples evidenced one area of highly positive and significant differences in mean scores when compared with the other two organizational plan groups- that of the Demonstration et.al. style.

2. The PL teacher sample obtained the highest positive mean scores in the Problem Solving et.al. style, highest mean score in Uses of Instructional Materials and the highest positive mean scores in the Sensory Emphasis categories.

3. In Leadership, Supplemental et.al. style and Positive Verbal categories, however, the PL teacher sample scored significantly lower mean scores.

4. A negative pattern in four of the seven Emotional Climate categories was evidenced with the PL teacher sample having the lowest mean scores of the three groups.

5. Platoon classes pupil samples showed significantly less mean score in Leadership (.01 level) and Recitation responses (.05 level). These pupil groups scored the highest mean scores in seven of the 20 categories of the study.

Special classes samples:

1. Summarizing the overall interaction pattern in the 20 categories of the study, the Special classes teacher sample obtained mean scores highly and significantly more positive in three of the Classroom Activities categories and the highest mean score in the remaining two categories.

2. The SP teacher sample scored significantly higher mean scores (at both the .01 and the .05 levels) than either of the other samples in one of the four teaching style areas.

3. In the Emotional Climate section, the SP teacher group scored significantly higher (.05 level) than either group with whom they were compared in the Positive Verbal area and were highest in mean scores in the remaining six of the seven categories of this section.

4. The Quotient score for the SP teacher group was significantly higher (.05 level) than mean scores for either of the other two teacher samples. The SP teacher sample obtained the highest interaction scores in 13 of the 20 measures under study.

5. Pupils in the SP sample scored mean scores highest in 10 of the 20 categories, although by identification this sample was not equated by any measure with pupils in "regular" homeroom and platoon groups.

Implications:

Questions posed with the introduction of these patterns of interaction among the organizational plan samples of Homeroom, Platoon and Special classes are pertinent for research: (1) Is the "plan" an influencing factor in the interactions of a classroom? (2) Are "special classes" teachers evidencing results of a more particularized type of teacher preparation and/or particular attributes for teaching than are teachers in other "plan" placements? (3) Are in-service or experiential differences reflected in certain types of "plan" interactions?

## Organizational Plan Data Trends: Graded and Ungraded Classes

The total pattern of mean scores for the Graded-Ungraded classes samples, shown in Table 13A-4 of Appendix F, more strongly reiterates the trend results for the Homeroom, Platoon and Special classes samples. These Graded groups consisted of all Homeroom and Platoon teacher/pupil samples and the Ungraded groups were composed of the previous 13 "special classes" teacher sample combined with five "primary ungraded" classes teacher samples. By similar procedures for interpretation, the following trends appeared:

Teacher samples:

1. Teacher groups in the UC sample scored higher and more positive mean scores in all five categories of the Classroom Activities section than did the GR teacher sample.

2. In Teaching styles, mean scores of the UC teacher group were higher in three of the four categories- significantly so in the Supplemental et. al. area.

3. In Sensory Emphasis categories and total Uses of Instructional Materials, mean score differences were only fractional between these Ungraded and Graded teacher samples.

4. In all seven of the Emotional Climate categories, the UC teacher group scored higher mean scores than the GR sample of teachers.

5. As reflected in the high Quotient score, the UC teacher group evidenced higher mean scores in 16 of the 20 categories of the study.

Pupil samples:

1. Pupil samples in the UC and GR classroom samples showed mean score differences fairly evenly distributed among the 20 categories, none of which showed significant differences by t- test results nor trend patterns.

Implications:

Trends of highly positive classroom interactions again favored the Ungraded classes teacher sample, composed predominantly of "special classes" teachers. The implied need to identify elements of influence are especially important when considering that pupils in these situations were showing no significant differences in interaction, even with the tacit suggestion of lesser abilities or compensatory needs among pupils in the "special classes" and "primary ungraded" classrooms. It is emphasized, however, that little information regarding the regular "primary ungraded" sample was obtained because of the limited number of such classrooms in this composite sample.

## Great Cities School Improvement Program Schools Data Trends

The final presentation of data for purposes of interpreting trends of interaction is concerned with the comparison of the two Great Cities schools samples, shown in Table 13A-5 of Appendix F.

Trends:

1. Teacher samples in School I evidenced higher mean scores in four of the five areas of the Classroom Activities section - one at significant level.

2. In Teaching styles, the School I teacher sample also revealed higher mean scores in every category of this section- one at significant level.

3. Mean scores in two of the three Sensory Emphasis categories, as well as mean score in total Uses of Instructional Materials, favored the School I teacher sample.

4. The School I teacher sample also scored higher mean scores in five of the seven Emotional Climate categories - one at significant level.

5. Pupil samples showed pupils in School I scoring higher mean scores in three of the five Classroom Activities categories, three of the four Pupil Responses areas, three of the three Sensory Emphases, and five of the seven Emotional Climate

categories for a total of 14 highest mean scores in the 20 categories although none of the differences reached significant levels with the exception of the Pupil Mobility category.

Implications:

A major implication of these data of total category trends is the usefulness of measurements of this type in assessing areas of similarity and differences in classroom interactions.

Of particular importance to "Great Cities" schools of this area, it would seem that similarities in the teaching styles of Lecture-Recitation and of Demonstration et.al. show little variance between teacher groups but that Problem-Solving et. al. and the Supplemental-Enriched-Individualized style differences might well point up the need for more "balance" in teaching styles for the similarly culturally disadvantaged pupil sample of School II.

For these pupil samples, too, little variance between Sensory Emphases seems indicative of similar provisions in these areas for pupils. With a major task of the Great Cities schools the provision and use of instructional materials, the data revealed uses of instructional materials by both teachers and pupils in each school as fairly equal.

Affectively, these teacher samples revealed little variance in Verbal or Negative Physical behaviors toward children, although the Punitive mean scores were significantly different. With in-service programs for teachers in the Great Cities schools concerned with the attitudes and affective behaviors toward children, differences in "punitive" occurrences need investigation.

Pupil samples, composed of predominantly Caucasian students in School I and of predominantly Negro students in School II, verified the conclusion in the previous racial data section that pupil samples, by race, showed no significant differences in the interactions measured in the study.

# CHAPTER V

## CONCLUSIONS AND IMPLICATIONS

Video-taped observations of teacher-pupil interaction in 96 different elementary school classrooms in an urban area were obtained of equal numbers of male and female Caucasian teachers and male and female Negro teachers with equal numbers of predominantly Negro or predominantly Caucasian pupil samples. Thirty-three different schools, representative of the Detroit Public School system, were selected for the study with 10 Suburban schools, 10 Mid-city schools, 10 Inner-city schools and three Great Cities School Improvement Program schools participating. A fairly even distribution of teachers were represented in 28 Suburban, 26 Mid-city, 27 Inner city and 15 Great Cities classrooms. In organizational plan, these 96 classrooms consisted of 53 "homerooms" or self-contained classes, 30 "platoon" or subject area classes and 13 "special" classes. Grade levels included Kindergarten through Sixth Grade classes, although not of the same numbers of pupils in each class. Representative subject matter areas of Science, Social Studies, Mathematics, Auditorium, Fine Arts, Health, Gym and Spanish classes as well as special classes for Remedial Reading, Speech Correction, Special A or Special B students, "emotionally disturbed", and deaf pupils were represented in the samples of the study.

Measurement of interaction occurrences in areas of Classroom Activities, Teaching styles and Pupil Responses, Sensory Emphases, Uses of Instructional Materials and the Emotional Climate of the Classroom were gathered through the use of The Revised Observer Schedule and Record Form II during video-taping of regular class sessions. Monitored for three hours each, 90 minute video-tape reels of one inch tape were obtained of the sequential activity in these 96 classrooms. These data were subjected to analysis of variance, analysis of covariance, t- tests of group means, correlational and intercorrelational analyses.

Analysis of variance was conducted on between and within teacher and pupil samples and differences of independent group means were submitted to t- test analyses for comparisons among samples. Six types of comparisons were concerned with:

1. Teacher race- Pupil race samples of similar and dissimilar racial samples;
2. Teacher sex/race- Pupil race samples;
3. School socio-economic-geographical location samples of teachers and pupils;
4. Organizational plan groups of Homeroom, Platoon and Special classes samples;
5. Organizational plan groups of Graded and Ungraded classroom samples and;
6. Two Great Cities School Improvement Program schools samples.

The study was intentionally descriptive and did not presume to test hypotheses. The basic purpose of the study was exploration of problem areas. Findings are presented with each type of comparison with trends and implications, from details in Chapter IV, summarized.

### Teacher Race- Pupil Race Data

Findings:

1. No highly significant differences among teacher or pupil samples, by race, whether in similar or dissimilar racial combinations, were found in these data.

2. While variances between groups were evident in some aspects of interaction, neither the urban teachers nor their pupils showed important differences in the described aspects of the study.

Trends:

1. Trends in total interaction patterns revealed that the racially similar samples (Caucasian teachers-Caucasian pupils; Negro teachers- Negro pupils) showed similar over-all patterns of interaction.

2. Racially dissimilar groups, in total interaction patterns, however, revealed the Negro teacher- Caucasian pupil sample scoring highest mean scores in positive interactions and the Caucasian teacher-Negro pupil sample scoring lowest mean scores in positive interactions among the four racial groupings.

Implications:

The interaction patterns evidenced in these samples suggest serious research in the following problem areas:

1. Do Caucasian teachers find it "difficult" to work with pupils not of their own "social class" or race?

2. Does the trend of a highly positive total interaction pattern shown by the Negro teacher-Caucasian pupil sample suggest that Negro teachers "work better" with Caucasian pupils than with pupils of their own race?

3. Does striving to either maintain, or gain, "social class position" or social mobility affect the role of the teacher?

4. Are perceptions of pupils of elementary school age those of racial acceptance, as evidenced in the positive affective tendencies of the Caucasian pupil samples toward both races of teachers, or of racial preference, as evidenced in the trend of the Negro pupil samples toward teachers of their own race?

5. Would controlled studies in the affective behavior area, with the factor of 'self-fulfillment' for pupils dominant, implement teacher preparation and in-service assistance?

6. What is the "affective behavior orientation" emphasis in different college teacher preparation departments?

## Teacher Sex/Race- Pupil Race Data

Findings:

1. Comparisons based on the sex, as well as the race, of the teacher revealed few significant variances between groups except in amounts of Pupil Assistance and Pupil use of the Kinesthetic/Tactile emphasis in the classroom. No significant differences among teacher samples were evident.

2. Sex differences were shown in the sample of Caucasian pupils male Negro teacher group. The Caucasian pupils were significantly more assistive to these men teachers and their Caucasian peers than were other Caucasian pupil samples to female Negro teachers as well as more assistive than Negro pupil samples to either male or female, Negro or Caucasian, teachers or Negro peers.

3. Sex differences were shown in the Negro pupil- female Caucasian teacher sample with the Negro pupils more assistive to their female teachers than were other Caucasian pupil samples to male Caucasian teachers.

4. Significantly more Kinesthetic/Tactile uses of materials were shown in the Caucasian pupil- female Negro teacher sample than in five other sex/race groups but investigation revealed that 10 of these 12 teachers taught in the primary grades or in special classes where such an approach may well have been emphasized in methodology.

Trends:

1. Caucasian pupil samples tended toward more positive over-all relationships with male teachers of the Negro race than with female teachers of the Caucasian race.

2. Negro pupil samples tended to relate less well with either sex or race of teacher than did the former Caucasian pupil sample.

Implications:

1. Such differences in assistance to teachers and peer groups suggest that pupil preferences of teachers, by sex, be investigated at varying age and/or grade levels. Currently, opinions that "men are 'better' for [illegible]-age children or disadvantaged children" or that "women teachers are 'better' with young children" have not been supported by this research.

2. Distinctions of grade level and subject area methodological emphases point out the differentiations which obviously must be made in any discussion of teacher and pupil behavior in order to refine or limit generalizations regarding classroom interaction.

3. Interesting psychological and sociological implications may also be posed for study: (a) Do Negro children, generally raised in a matriarchal family pattern, tend to interact more positively with women than men and with teachers of their own race? (b) Do Caucasian students tend to interact more positively with men teachers, surrounded as they are in the elementary school predominantly with women teachers? (c) Are developmental patterns in relationships with adults, by sex, apparent in these teacher-pupil relationships?

## School Socio-Economic-Geographical Data

Findings:

1. Only one category indicated significant variance and differences between samples in the analyses of the school socio-economic-geographical data: that of Teacher Problem-Solving/Interpretation teaching style. The Mid-city teacher sample scored significantly higher in use of this style than did the Inner-city teacher sample.

Trends:

1. The general pattern of interaction showed the Mid-city teacher sample the most positive interacting group when compared with the Suburban, Inner city and Great Cities teacher samples in Classroom Activities, Teaching styles and Sensory Emphasis sections of the study but less positive in the Emotional Climate areas than the Great Cities teacher sample. Mid-city pupil samples apparently reflected this high teacher interaction, scoring highest of the four geographically located groups in the majority of the Classroom Activities categories, half of the Pupil Responses categories and highest in the majority of the Emotional Climate categories.

2. The Great Cities teacher sample scored most positively in all categories of the Emotional Climate section and high in Classroom Activities and Sensory Emphases sections. The Great Cities pupil sample showed the highest mean scores in five of the total 20 categories.

3. The sample of Inner city teachers scored highest mean scores only in the Aural-Oral category. Pupils in the Inner city samples were scoring highest mean scores in two of the 20 categories but lowest of the four groups in six positive categories and highest in five of the negative empathy categories.

4. Suburban teacher samples of teachers and pupils also showed generally low interaction patterns. The teacher sample scored the lowest mean scores in all of the Classroom Activities categories, lowest in the majority of the teaching style categories, lowest in the majority of the Sensory Emphases areas, lowest in total Uses of Instructional Materials and lowest in five of the seven Emotional Climate categories. The suburban pupil sample scored highest means in only two of the 20 categories of the study.

Implications:

If such samples are accepted as representative of urban areas serious problem areas for further study are proposed:

1. The trend of the Mid-city samples toward highly positive "academically-oriented" interactions would seem a fruitful area of exploration into the factors which are influential in these "transitional area" schools. (a) Are such positive classroom procedures related to achievement growth? (b) Do the less positive empathic relationships in the Mid-city teacher sample affect educational attainment? (c) Are there particular factors in this area influencing the generally high pupil empathic behaviors toward teachers?

2. The extremely positive general emotional climate trend in the Great Cities school sample is also worthy of investigation. Similar questions related to educational achievement may also be posed for these locations. (a) What types of teacher preparation or in-service assistance can be identified as related to these high positive interactions? (b) Are placement selections for Great Cities schools based on criteria different from other placement selections?

3. Trends described in the Inner city and Suburban teacher samples seem in direct contradiction to the needs of the former pupil group and the environment of the latter group of pupils. Certainly low and generally negative patterns of performances and behaviors affect pupil interaction. The lower scores of these two samples in such highly divergent environments underscores that the presence or absence of materials, school physical plant-equipment provisions, location or cultural milieu do not interact directly with pupils- but teachers do!

### Organizational Plan Data: Homeroom, Platoon and Special Classes

Findings:

The largest numbers of significant variances in all six comparisons of the study (race, sex/race-race, geographical, graded and ungraded classes, Great Cities schools and Homeroom, Platoon and Special classes samples) occurred in these samples comparing the Homeroom, Platoon and Special classes samples.

1. Categories of Teacher and Pupil Leadership, Teacher Assistance, Teacher Mobility, Teacher Demonstration and Teacher Supplemental *et.al.* styles revealed differences at the .01 level of significance. At the .05 level, Pupil Recitation responses, Teacher Positive Verbal behaviors and Teacher Quotient scores showed significant differences among samples.

2. In each instance of comparison of the Special classes teachers resulting in significant or highly significant differences between independent group means, the Special classes teacher sample showed more amounts of positive interaction, when mean scores were compared with the Platoon sample in Leadership, use of Supplemental teaching style, Positive Verbal interaction with pupils and total Quotient score representing over-all performance.

3. When compared with the Homeroom teacher sample, the Special classes teacher sample showed differences, at the .01 level, in mean scores of more Assistance to pupils, more Mobility in the classroom, more uses of Supplemental *et.al.* teaching style and a significantly higher Quotient score. At the .05 level, the Special classes teacher sample also showed more amounts of Positive Verbal interaction, by mean scores, with students. All results in these areas favored the Special classes teacher sample.

4. The Platoon teacher sample, at the .01 level, showed a mean score higher than that of the Homeroom teacher group in amounts of Demonstration *et.al.* teaching style. This was the only category favoring the Platoon group when compared with others.

5. The only category in which the Homeroom teacher sample scored significantly higher in mean score than either of the other samples of teachers was in the Teacher Leadership category.

6. Pupil samples showed two areas of differences: Homeroom pupil samples indicated highly significant differences in Leadership when compared with the

Platoon pupil sample and, at the .05 level, showed more amounts of responses in the Recitation category than did either Platoon or Special classes pupil groups.

Trends:

1. It is assumed that the cumulative effects of the lower interaction mean scores of Suburban and Inner city teacher samples seemed to affect the results when combined into organizational plan groups of Homeroom, Platoon and Special classes teacher samples. The Special classes teacher sample, when considered by geographical location, was fairly balanced in these suburban and inner-city samples and predominant in the higher interacting Great Cities group. "Clustering" of scores seems to have tended to influence these results.

2. In 16 of the 20 categories of the study, the Special classes teacher sample scored above the grand mean with strongly positive behaviors in all Classroom Activities and Emotional Climate categories - reflecting the Great Cities school sample results.

3. The Platoon teacher sample scored above the grand mean in 13 of the 20 categories although only fractionally so in five of the 13 classifications.

4. The Homeroom teacher sample scored highest in only one category- that of the Lecture-Recitation teaching style and was the lowest scoring group of the three samples in 14 of the 20 categories.

Implications:

These descriptive patterns contradict a general educational hypothesis that the "homeroom" plan is "superior" to other types of grouping plans in the elementary school. As the result of findings of the present study, special questions for exploration include:

1. Is the "plan" a determining factor in the interactions of a classroom?

2. Are the Special classes teachers, in general, evidencing a particularized type of teacher preparation? Are there personality attributes in this sample which influenced their placement and general ability to work positively with pupils?

3. Do teachers have a choice of organizational plan in which to teach? Does this seem related to their classroom performance?

4. Are the "job demands" in teaching in particular "plans" related to the academic or empathic interactions?

## Organizational Plan Data: Graded and Ungraded Classes

Findings:

1. Significant differences between group means appeared in four teacher sample categories in the Graded and Ungraded samples: Teacher Mobility, Teacher Supplemental et. al. style, Teacher Positive Verbal and Teacher Punitive categories. Each of these differences were significant at the .05 level and in each instance the Ungraded classroom teacher sample scored higher in Mobility, use of Supplemental style and Positive Verbal interactions and lower in Teacher Punitive behaviors.

2. These differences parallel some significant differences found in the Homeroom, Platoon and Special classes teacher samples as a result of combining all Homeroom and Platoon teachers into the "Graded" sample and all Special classes teachers and five "primary ungraded" classroom teachers into the "Ungraded" sample for this analysis. Areas of similar relationships did not repeat the differences found in areas of Teacher Leadership, Teacher Assistance and Teacher use of the Demonstration style of the previous Homeroom, Platoon and Special classes teacher samples.

Trends:

1. The Ungraded classroom teacher sample showed more over-all positive interactions in all but three categories of the total study when compared with the Graded sample. They scored higher mean scores in all five of the Classroom Activities categories, higher in three of the four teaching styles, fractionally higher in the Kinesthetic/Tactile area, and most positively in all seven of the Emotional Climate categories as well as in total Quotient score.

2. The Graded classroom teacher sample scored the highest mean score in use of the Lecture-Recitation style but only fractionally higher than grand mean in Uses of Instructional Materials, Aural-Oral and Visual emphasis categories.

3. Pupil samples in these Graded and Ungraded classrooms showed mean score differences fairly evenly distributed among the 20 categories, none of which was significant statistically.

Implications:

1. The need to identify elements of influence in teacher preparation and placement, personality characteristics, affective attitudes and experiences, and "plan" preferences and job demands is reiterated when comparisons are made among the graded and ungraded classroom samples.

2. It is strongly suggested, from the correlational data presented in the study, as well as from the appended intercorrelational results, that pupil react in kind and degree to positive behaviors from teachers. With the more positive interaction patterns shown by these "special classes" and "ungraded classes" teacher samples, pupils in these situations are showing no significant differences in the area of human relationships in the classroom, with lesser abilities or with compensatory needs, than are pupils in the "regular" homeroom, platoon or "graded" classes samples.

## Great Cities School Improvement Program Schools Data

Two similar "Great Cities" schools of almost identical program, location, numbers of pupils and staff make-up were selected for comparison as a test of instrument sensitivity and differences among samples.

Findings:

1. In the three categories of Teacher Participation, Pupil Mobility and lack of Punitive behaviors, Significant differences in mean scores ( at the .05 level) showed School I with higher scores than School II. In the category of Teacher Problem-Solving et.al. the School I teacher sample also scored significantly higher (.01) group means than the School II teacher sample.

2. In each instance of significant differences between independent group means, results favored the School I sample.

3. Only one area of significant differences between pupil samples in these two schools was detected- that of Pupil Mobility- with significantly more Mobility among the pupil sample in School I.

Trends:

1. It was again apparent that teacher race or sex considerations, socio-economic-geographical location, material provisions or pupil racial samples were not influencing factors since these elements were selected as bases of similarities between the two schools.

2. The racially different pupil populations revealed no significant differences in discrete categories, except that of Mobility of pupils (controlled to a great degree by teachers), but general trends of interaction favored the pupil sample in School I which consistently scored higher mean scores than pupils in

School II which was attributed to the generally higher positive pattern of interaction of the School I teacher sample.

3. The School I teacher sample obtained the highest mean scores in four of the five Classroom Activities categories, four of the four teaching styles categories, two of the three Sensory Emphasis categories and five of the seven Emotional Climate areas for a total of highest interaction in 16 of the 20 areas.

4. A reoccurring phenomenon in these analyses, which group the total 96 teachers into six differing types of samples, is the apparent domination of a low interaction group- whether of geographical sample or organizational plan sample- which seemingly influences various groupings. In the geographical samples these Great Cities schools were highly positive in general interaction, particularly the Classroom Activities and Emotional Climate sections. However, in organizational plan samples, the Homeroom, Platoon and Graded classroom teacher samples were much lower in interaction than were the Special classes or Ungraded classroom teacher samples. Thus it seems apparent that the predominant numbers of Homeroom and Platoon teachers ( a total of six of the seven teachers in School II versus four of the seven teachers in School I); a predominance of the lower interacting Graded classroom teacher sample (six in School II versus three in School I); and lesser numbers of the higher interacting Special classes or Ungraded classroom teachers (one in each classification of School II versus three Special classes and four Ungraded classroom teachers in School I) influenced the results of the analysis of the two Great Cities schools.

Implications:

To repeat the quotation from Dr. Carl Marburger, former head of the Great Cities School Improvement Program in the Detroit schools, "...the teacher's attitude is the most crucial factor" and "...teacher expectations have surprising impact on pupil achievement" stresses that problems of teacher and pupil attitudes as well as "expectations" and achievement are demanding areas for research.

## Significant Differences in the Study

Findings:

1. The greatest numbers of significant differences among group means in teacher samples appeared in the organizational plan comparisons of Homeroom, Platoon and Special classes teachers. These differences were reflected in categories of Leadership, Assistance, Mobility, Demonstration and Supplemental et.al.teaching styles, and Positive Verbal interactions.

2. The greatest numbers of significant differences among group means of pupil samples appeared in the teacher sex/race - pupil race data in areas of Pupil Assistance and Pupil use of Kinesthetic/Tactile materials.

3. In order of magnitude, those categories with the greatest number of significant differences among group means in the total study appearing among teacher samples were (a) Positive Verbal interactions, (b) Supplemental teaching style, (c) Mobility and Leadership.

4. Among pupil samples, in order of magnitude, the greatest numbers of significant differences among group means of the total study occurred in (a) Pupil Assistance, and (b) uses of Kinesthetic/Tactile emphasis categories.

## Correlational Data

Correlations between teacher and pupil sample scores in discrete categories were conducted and, while not presuming to establish any evidence of "causality", these are presented to reveal the significant relationships between teacher and pupil interaction categories of the study.

Findings:

1. Of the 20 major categories of the study correlations between the teacher variable and the pupil variable of the same general description were found to be significantly related at the .01 level in 16 categories. In order of magnitude these are listed below:[1]

| CATEGORY TITLES | | CATEGORY TITLES | |
|---|---|---|---|
| Supplemental-Enriched-Individualized teaching style and responses | .776** | Demonstration-Manipulation-Illustration teaching style and responses | .480** |
| Positive Covert behaviors | .710** | Visual Emphasis | .442** |
| Positive Verbal behaviors | .609** | Kinesthetic/Tactile Emphasis | .388** |
| Participation | .598** | Assistance | .374** |
| Positive Physical behaviors | .564** | Problem-Solving/Interpretation teaching style and responses | .370** |
| Mobility | .525** | Negative Covert behaviors | .353** |
| Aural-Oral Emphasis | .521** | Total Uses of Instructional Materials | .342** |
| Negative Physical behaviors | .497** | | |
| Lecture-Question-Answer-Use of Text, Workbook-Recitation teaching style and response | .487** | | |

"r"= (.01)=.237** (.05)= .205* df= 94.

2. One category was found to be significantly related at the .05 level: Teacher (self) Restriction and Pupil (imposed) Restriction .229*

3. Three categories showed only low positive relationships:

| | | | |
|---|---|---|---|
| Negative Verbal behaviors | .168 | Leadership | .011 |
| Punitive-Disruptive behaviors | .152 | | |

4. The teacher-pupil categories bearing the strongest relationships were those of positive affectivity in the classroom, with the exception of Assistance and Negative Physical behaviors. Although highly and significantly related, categories of "neutral" or less positive affectivity were less strongly related.

Conclusions:

A major conclusion of this descriptive study is that concordant and covariant relationships existed between the variables describing the teacher interaction and the related variable describing pupil interaction in the discrete categories. In the 20 categories of interaction an analysis of covariance revealed 18 were significantly related at the .01 level.

Implications:

Educational needs by abilities, cultural environment and grade levels further compound the problem of assessment although generalized concepts of teacher-pupil interactions, in the framework of the study, may be implied in the following generalizations:

1. Teachers, in their several roles in the classroom, do not necessarily need to predominantly assume "centrality" or "leadership" roles in authority-superior relationships since such teacher behaviors were not highly related to the

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[1] Percentile values of "r" abridged from R.A. Fisher and F. Yates, Statistical Tables, published by Oliver and Boyd, Ltd.

majority of the pupils' interactions. However, participation with, and assistance to, pupils is considered a necessary and desirable aspect of teaching. Those teachers who did participate and assist in classrooms were also generally more mobile, restricted themselves and their pupils less and evidenced more positive verbal, physical and covert behaviors in interactions.

2. No particular "teaching style", as identified in this study, was deemed more or less inherently "effective" than others. It was assumed by the author that a "balance of styles", in which provisions for varied and multi-sensory learnings were present, was more desirable than predominant emphasis of a particular teaching style.

3. No responses by pupils to any teaching style was considered more advantageous than another; it was again the multi-responsiveness of groups of pupils which seemed more educationally favorable.

4. Pupil responses to teacher provision of activities, styles of teaching, uses of instructional materials and positive empathic relationships showed highly and significantly positive relationships. These associations were particularly strong in the "positive value" areas but also significant in the "negative value" categories of identified interactions. It has been shown in previous research, as well as practice, that the emotional climate of the classroom is more healthful and conducive to learning when positive. These data establish the significantly high, although less strong, relationships of concommitant negative interactions concluded to be less desirable and less conducive to an educational or emotional atmosphere.

5. The "output" of the teacher in action is responded to, in kind and degree, and evidenced in the "feedback" of the pupils' responses.

## Intercorrelational Data

Intercorrelations of each of the categories of the study are included in Appendix E as additional knowledge of the relationships between teacher actions, pupil actions and teacher-pupil interactions in all categories with highly significant values (at the .01 level).

Findings:

1. Of the 816 intercorrelations under consideration, 50.4 percent were significant at the .01 level. While many of the categories contain items in common, resulting in high positive correlations of the variables describing the same general types of behaviors of teachers and pupils, intercorrelations present a composite picture of the relationships of performance in each specific category with performances in all other categories to establish common denominators in the types of interaction evidenced by the teacher sample, the pupil sample and among teacher-pupil samples.

## Video-Tape Observations

The video-tape observations, combined with the Revised Observer Schedule and Record Form II instrument for recording interactions of in-service teachers and public school pupils of an urban area in their regular classroom sessions, are considered to be technically unique both as data-gathering devices and as teacher preparation materials. Descriptions of the video-tape reels retained from the study for college use are included in Appendix C of the report. A detailed report of the video- tape observational equipment and set-up procedures employed in the study are presented in Appendix D.

## SUMMARY

Findings of the study indicated that racial and sex differences among teacher and pupil samples were not at significant levels. Groupings of teacher and pupil samples into socio-economic-geographical classifications did not reveal significant differences of importance in the total number of categories. The most pertinent area to which attention must be given to teacher interactions with pupils, revealed by the large number of significant differences among group means, is that of the organizational plans for grouping elementary school students.

Trends of interaction among the teacher and pupil samples indicated implications for further research in the interactions among pupil samples, in the socio-economic-geographical teacher and pupil samples and, again, in the area of the organizational plan of classrooms.

General problem areas suggested by this report focus attention on the following educational questions:

1. What organizational plans may be tested which will best serve the interests and needs of teachers and pupils?
2. How may knowledge from the cognitive field and the affective relations field be combined to implement "quälity teaching"?
3. What differences in teacher preparation programs affect ways in which teachers provide for, and relate to, their pupils?

Many of the implications formulated from the descriptive data have been obvious; others have questioned opinions widely held or not based on evidence; still others have verified findings already well investigated. The general objectives of the study have been used as guides to the report. Evidence, gathered through video-tape recordings and observational techniques, has been presented relative to teacher-pupil interactions in 96 elementary school classrooms. Analyses have been presented, by description, with generalized implications or conclusions. Thirty representative video-tapes of teachers and pupil groups in elementary school classrooms have been retained for instructional and research use in teacher preparation programs with descriptions of video-tape content, equipment and set-up procedures incorporated in the report.

# APPENDIX A

# REVISED OBSERVER SCHEDULE AND RECORD II

Morrison-WSU '64
Obs. I Date____
Obs.III Date____
Obs.V Date____

Teacher's Name__________ Rm#_____ School__________ District ____ Tel:________
Sex_____ C A N Grade______ Subject or Class__________ Principal__________
Recorder's Name__________

ACTIVITIES SECTION: Observe 15 min. each of 3 random times. TALLY with symbol if item occurs. Use odd numbered columns

| No.Item Description | Teacher Occurrences | | | | Pupil Occurrences | | | | No.Item Description | Teacher Occurrences | | | | Pupil Occurrences | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | I | III | V | TOTAL | I | III | V | TOTAL | | I | III | V | TOTAL | I | III | V | TOTAL |
| 1Wrks w ind p | | | | | | | | | 26Reprts,gvs tlk frm nts | | | | | | | | |
| 2Wrks n sm grp | | | | | | | | | 27Dmnstr vrb,gstr | | | | | | | | |
| 3Wrks n ttl cls | | | | | | | | | 28Hndls routne | | | | | | | | |
| 4T clls on | | | | | | | | | 29Gos n rmd | | | | | | | | |
| 5P clls on | | | | | | | | | 30Brrws obj | | | | | | | | |
| 6Asks asst frm p | | | | | | | | | 31Rds,stdys,crrct wrk | | | | | | | | |
| 7Asks asst frm t | | | | | | | | | 32Clns rm,bd | | | | | | | | |
| 8Offr asst to p | | | | | | | | | 33Dcrts rm,bd | | | | | | | | |
| 9Offr asst to t | | | | | | | | | 34Tlks w vstr | | | | | | | | |
| 10Dclns asst to p | | | | | | | | | 35Entrs,lvs rm | | | | | | | | |
| 11Dclns asst to t | | | | | | | | | 36Pnts,cts,drws | | | | | | | | |
| 12Dclns asst frm p | | | | | | | | | 37Pass ppr,bks,mtrl | | | | | | | | |
| 13Dclns asst frm t | | | | | | | | | 38Forms/incl n grp | | | | | | | | |
| 14Infrml cnvrstn w p | | | | | | | | | 39Mnplts acad obj | | | | | | | | |
| 15Infrml cnvrstn w t | | | | | | | | | 40Mnplts for obj | | | | | | | | |
| 16Infrml cnvrstn w cls | | | | | | | | | 41Relocts to oth rm | | | | | | | | |
| 17Sggst, ntrpret | | | | | | | | | 42Lstns- tsk | | | | | | | | |
| 18Rcts,rclls fact | | | | | | | | | 43Sits- no tsk | | | | | | | | |
| 19Rds ald to t or p | | | | | | | | | 44Sits on flr,tbl | | | | | | | | |
| 20Rds, tlls stry to p | | | | | | | | | 45Relief,rcss,brk | | | | | | | | |
| 21Lds sng,ex,gm,drll | | | | | | | | | 46Mvs frly | | | | | | | | |
| 22Tst situ | | | | | | | | | 47Mvmts rstrctd | | | | | | | | |
| 23Drws,diag at bd | | | | | | | | | 48Chngs seats vol | | | | | | | | |
| 24Wrts,wrks at bd | | | | | | | | | 49Sits w oth prsn vol | | | | | | | | |
| 25Prtcpt rm gm,skt,ply | | | | | | | | | 50Crclts/cks wrk for p | | | | | | | | |

MATERIALS SECTION
Check ONCE if item is used

| | I | | III | | V | | TOTAL | | | I | | III | | V | | TOTAL | | | I | | III | | V | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | t | p | t | p | t | p | T | P | | t | p | t | p | t | p | T | P | | t | p | t | p | t | p | T | P |
| 51Blkbd(wrt,illus) | | | | | | | | | 61Radio | | | | | | | | | 71Commr Tchng Aid | | | | | | | | |
| 52Bltbd(cnstrct,use) | | | | | | | | | 62Map | | | | | | | | | 72T cnstrctd aid | | | | | | | | |
| 53Flt bd | | | | | | | | | 63Chrt | | | | | | | | | 73Txt,wrkbk-sme lvl | | | | | | | | |
| 54Wrd/No. cards | | | | | | | | | 64Pctr | | | | | | | | | 74Txt,wrkbk-mult lvl | | | | | | | | |
| 55Sld,flmstrp | | | | | | | | | 65Flm | | | | | | | | | 75Supplmntl Rdng mtrl | | | | | | | | |
| 56Rcrdr,rcrd plyr | | | | | | | | | 66TV | | | | | | | | | 76Wrtng lssn | | | | | | | | |
| 57Obj dsply | | | | | | | | | 67Dmns | | | | | | | | | 77Copyng frm bk,bd | | | | | | | | |
| 58Obj mnpltn | | | | | | | | | 68Art | | | | | | | | | 78Dictn frm t or p | | | | | | | | |
| 59Resrce mtrls | | | | | | | | | 69Spkr | | | | | | | | | 79Fill in blnks | | | | | | | | |
| 60Own mtrls | | | | | | | | | 70Modl | | | | | | | | | 80Museum mtrls-cmmty | | | | | | | | |

## APPENDIX A (continued)

REVISED OBSERVER SCHEDULE AND RECORD II-Page 2

Morrison-W.S.U-'64

Teacher's Name______ Rm#____ School______ District____ Soc.Ec.Area____

Sex____ C A N Grade____ Subject or Class______ Principal______ Org.Plan____

Obs.II Date______

Obs.IV Date______

Obs.VI Date______

EXPRESSIVE BEHAVIORS SECTION:Alternate 15 min. tallies of item occurrence(even cols.)with 15 min.tallies(odd cols-PAGE 1)

| No. Item Description | TEACHER | | | | PUPILS | | | | No. Item Description | TEACHER | | | | PUPILS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | II | IV | VI | TOTAL | II | IV | VI | TOTAL | | II | IV | VI | TOTAL | II | IV | VI | TOTAL |
| 81Smls plsntly | | | | | | | | | 108Whsprs disrptv | | | | | | | | |
| 82Dsn't sml | | | | | | | | | 109Hlps phys | | | | | | | | |
| 83Nds hd pos | | | | | | | | | 110Prvnts phys | | | | | | | | |
| 84Shks hd neg | | | | | | | | | 111Hlps vrbly | | | | | | | | |
| 85Polit pause | | | | | | | | | 112Prvnts vrbly | | | | | | | | |
| 86Neg pause | | | | | | | | | 113Lghs w t | | | | | | | | |
| 87Points pos | | | | | | | | | 114Lghs @ t | | | | | | | | |
| 88Points neg | | | | | | | | | 115Lghs w p | | | | | | | | |
| 89Rais hnd attn | | | | | | | | | 116Lghs @p | | | | | | | | |
| 90Snps fngrs attn | | | | | | | | | 117Agrees | | | | | | | | |
| 91Clps hnds glee | | | | | | | | | 118Argues | | | | | | | | |
| 92Clps hnds crssly | | | | | | | | | 119Praises | | | | | | | | |
| 93Sooths mstk | | | | | | | | | 120Shms | | | | | | | | |
| 94Rdcls mstk | | | | | | | | | 121Nrml tone | | | | | | | | |
| 95Humor-jok | | | | | | | | | 122Ylls | | | | | | | | |
| 96No humor-sqlch | | | | | | | | | 123Joins situ | | | | | | | | |
| 97Xprss symp,emp | | | | | | | | | 124Withdrws situ | | | | | | | | |
| 98No xprss symp | | | | | | | | | 125Dnies req uncond | | | | | | | | |
| 99Ans polit,plsnt | | | | | | | | | 126Rjcts req uncond | | | | | | | | |
| 100Ans rdly,crssly | | | | | | | | | 127Ignrs p req-delib | | | | | | | | |
| 101Waits polit for t | | | | | | | | | 128Ignrs t req-delib | | | | | | | | |
| 102Intrupts t | | | | | | | | | 129Crrcts pos-how to | | | | | | | | |
| 103Waits polit for p | | | | | | | | | 130Crtcz,cnsrs-not to | | | | | | | | |
| 104Intrupts p | | | | | | | | | 131Dvrts p vrbly | | | | | | | | |
| 105Touchs pos | | | | | | | | | 132Blcks act(stop) | | | | | | | | |
| 106Touchs neg | | | | | | | | | 133Sttls prob pos | | | | | | | | |
| 107Whsprs polit | | | | | | | | | 134Avoids sttl prob | | | | | | | | |

PUPIL DISRUPTIVE-TEACHER PUNITIVE BEHAVIORS(Check once if item occurs)

| No.Item Description | II | | IV | | VI | | TOTAL | | No.Item Description | II | | IV | | VI | | TOTAL | | No.Item Description | II | | IV | | VI | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | t | p | t | p | t | p | T | P | | t | p | t | p | t | p | T | P | | t | p | t | p | t | p | T | P |
| 135Ywn,strch,doz | | | | | | | | | 142Sntch,shv,thrw | | | | | | | | | 149Scld,tk obj,wrk | | | | | | | | |
| 136Slmp,str n spc | | | | | | | | | 143Scffl,dfy,fght | | | | | | | | | 150Mv phys-chng st | | | | | | | | |
| 137Doodl,wggl | | | | | | | | | 144Swr,tntrm,cry | | | | | | | | | 151Sit/stnd inact | | | | | | | | |
| 138Shw off,mk fcs | | | | | | | | | 145Run arnd,scape | | | | | | | | | 152Sit w oth-neg | | | | | | | | |
| 139Pout,slk,whne | | | | | | | | | 146Isolat slf-hide | | | | | | | | | 153Xtra wrk,cln up | | | | | | | | |
| 140Tattl,teas,taunt | | | | | | | | | 147Thrtn,warn | | | | | | | | | 154Deprv actvt,mtr | | | | | | | | |
| 141Isolate in rm | | | | | | | | | 148Snd frm rm | | | | | | | | | 155Shk,strk,mnhndl | | | | | | | | |

## APPENDIX B

Page 1

APPENDIX B

ROScAR SCORING KEY- Page 1

Teacher's Name________ Sex______ C A N School______ Recorder:______ Scorer:______

ACTIVITIES SECTION:Enter TOTAL for each item numbered in Teacher and/or Pupil boxes across

| No. Item Description | LEADERSHIP | | PARTICIPATION | | ASSISTANCE | | MOBILITY | | RESTRICTION | | Lect;Q/A; Txt;Wrkbk Recite | | Prob.Solv Interpret | | Manip Demon-Illst | | Supplmt Enrichd-Indvdlz | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T | P | T | P | T | P | T | P | T | P | T | P | T | P | T | P | T | P |
| 1Wrks w ind p | ☐ | ☐ | | | ☐ | ☐ | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 2Wrks n sm grp | ☐ | | | ☐ | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 3Wrks n ttl cls | | | ☐ | ☐ | | | | | | | ☐ | ☐ | | | | | | |
| 4T clls on | ☐ | | ☐ | | | | | | | | ☐ | | | | | | | |
| 5P clls on | | ☐ | | ☐ | | | | | | | | ☐ | | | | | | |
| 6Asks asst frm p | | | ☐ | ☐ | | | | | | | ☐ | ☐ | | | | | ☐ | ☐ |
| 7Asks asst frm t | | | | ☐ | | | | | | | | ☐ | | | | | | ☐ |
| 8Offr asst to p | | | | | ☐ | ☐ | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 9Offr asst to t | | | | | | ☐ | | ☐ | | | | | | | | | | ☐ |
| 10Dclns asst to p | | | | | | | | | ☐ | ☐ | | | | | | | | |
| 11Dclns asst to t | | | | | | | | | | ☐ | | | | | | | | |
| 12Dclns asst frm p | | | | | | | | | ☐ | ☐ | | | | | | | | |
| 13Dclns asst frm t | | | | | | | | | | ☐ | | | | | | | | |
| 14Infrml cnvrstn w p | | | ☐ | ☐ | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 15Infrml cnvrstn w t | | | | ☐ | | | | ☐ | | | | | | | | | | ☐ |
| 16Infrml cnvrstn w cls | | | ☐ | ☐ | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 17Sggst,ntrpret | | | ☐ | ☐ | ☐ | ☐ | | | | | | | ☐ | ☐ | | | | |
| 18Rcts,rclls fact | | | ☐ | ☐ | | | | | | | ☐ | ☐ | | | | | | |
| 19Rds ald to t or p-txt | ☐ | ☐ | ☐ | ☐ | | | | | | | ☐ | ☐ | | | | | | |
| 20Rds,tlls stry to p | ☐ | ☐ | | | | | | | | | | | | | | | ☐ | ☐ |
| 21Lds sng,ex,gm,drll | ☐ | ☐ | ☐ | ☐ | | | ☐ | ☐ | | | ☐ | ☐ | | | | | | |
| 22Tst situ | ☐ | | | ☐ | | | | | | | ☐ | ☐ | ☐ | ☐ | | | | |
| 23Drws,diag at bd | ☐ | ☐ | | | | | ☐ | ☐ | | | | | | | ☐ | ☐ | | |
| 24Wrts,wrks at bd | ☐ | ☐ | ☐ | ☐ | | | ☐ | ☐ | | | ☐ | ☐ | ☐ | ☐ | | | | |
| 25Prtcpt gm,skt,ply | | | ☐ | ☐ | | | ☐ | ☐ | | | | | | | ☐ | ☐ | ☐ | ☐ |
| 26Rprts,gvs tlk-nots | ☐ | ☐ | ☐ | ☐ | | | | | | | | | ☐ | ☐ | | | | |
| 27Dmnstr vrb/gstr | | | ☐ | ☐ | | | ☐ | ☐ | | | | | | | ☐ | ☐ | | |
| 28Hndls routne | | | ☐ | ☐ | ☐ | ☐ | | | | | | | | | ☐ | ☐ | | |
| 29Gos n rrnd | | | | | ☐ | ☐ | ☐ | ☐ | | | | | | | | | | |
| 30Brrws obj | | | ☐ | ☐ | ☐ | ☐ | | | | | | | | | | | | |

## APPENDIX B (continued)
## ROScAR SCORING KEYS--Page 2

Teacher's Name_______________ Sex_____ C A N School______ Grade____ Recorder:___ Scorer:___

MATERIALS SECTION: Enter TOTAL for each item numbered in Teacher and/or Pupil boxes across

| No. Item Description | AURAL | | ORAL | | VISUAL | | KINES-THETIC-TACTILE | | Lect;Q/A; Txt,Wrkbk Recite | | Prob-Solv Interpret | | Manip-Demon-Illst- | | Supplmt Enrichd Indvdlz | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T | P | T | P | T | P | T | P | T | P | T | P | T | P | T | P |
| 51Blkbd(wrt,illus) | | | | | ☐ | ☐ | ☐ | ☐ | | | | | ☐ | ☐ | | |
| 52Bltbd(cnstrct,use) | | | | | ☐ | ☐ | ☐ | ☐ | | | | | ☐ | ☐ | | |
| 53Felt bd | | | | | ☐ | ☐ | ☐ | ☐ | | | | | ☐ | ☐ | ☐ | ☐ |
| 54Wrd/No. cards | | | | | ☐ | ☐ | | | | | ☐ | ☐ | | | | |
| 55Flmstrp,sld,opaq | | | | | ☐ | ☐ | | | | | | | ☐ | ☐ | | |
| 56Rcrdr,rcrd plyr,pno | ☐ | ☐ | ☐ | ☐ | | | | | | | | | ☐ | ☐ | | |
| 57Obj dsply | | | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 58Obj mnpltn | | | | | ☐ | ☐ | ☐ | ☐ | | | | | ☐ | ☐ | ☐ | ☐ |
| 59Resrce mtrls | | | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 60Own mtrls | | | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 61Rado,Flm, TV | ☐ | ☐ | | | | | | | | | | | ☐ | ☐ | | |
| 62Map | | | | | ☐ | ☐ | | | | | | | ☐ | ☐ | ☐ | ☐ |
| 63 Chrt | | | | | ☐ | ☐ | | | | | | | ☐ | ☐ | ☐ | ☐ |
| 64Pctr | | | | | ☐ | ☐ | | | | | | | ☐ | ☐ | ☐ | ☐ |
| 65Dmnstrn, Spkr | | | | | ☐ | ☐ | ☐ | ☐ | | | | | ☐ | ☐ | ☐ | ☐ |
| 66Art | | | | | ☐ | ☐ | ☐ | ☐ | | | | | ☐ | ☐ | ☐ | ☐ |
| 67Modl | | | | | ☐ | ☐ | | | | | | | ☐ | ☐ | ☐ | ☐ |
| 68Commr Tchng Aid | | | | | ☐ | ☐ | | | | | ☐ | ☐ | | | | |
| 69T cnstrctd aid | | | | | ☐ | ☐ | ☐ | ☐ | | | | | ☐ | ☐ | ☐ | ☐ |
| 70Text,wrkbk-sme lvl | | | | | ☐ | ☐ | | | ☐ | ☐ | | | | | | |
| 71Text,wrkbk-mlti lvl | | | | | ☐ | ☐ | | | ☐ | ☐ | | | | | ☐ | ☐ |
| 72Supplmtl Rdng mtrl | | | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| 73Wrtng lssn(Pupils) | | | | | | ☐ | | ☐ | | ☐ | | | | ☐ | | |
| 74Copyng frm bk,bd(Pupils) | | | | | | ☐ | | ☐ | | ☐ | | | | | | |
| 75Dictn-fill n blnks | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | | | ☐ | ☐ | | |
| 76Commnty-mseum mtrls | | | | | ☐ | ☐ | | | | | | | | | ☐ | ☐ |
| TOTALS: | | | | | | | | | | | | | | | | |
| N of Items: | 3 | 3 | 2 | 2 | 22 | 24 | 8 | 10 | 3 | 5 | 2 | 2 | 15 | 16 | 15 | 15 |

APPENDIX B (continued)
ROScAR SCORING KEYS- Page 3

Teacher's Name______________ Sex____ C A N School__________ Grade____ Recorder:___ Scorer:___

EXPRESSIVE BEHAVIORS SECTION: Enter TOTAL for items under T and/or P in each box across

| No. Item Description | POSITIVE VERBAL | | NEGATIVE VERBAL | | POSITIVE PHYSICAL | | NEGATIVE PHYSICAL | | POSITIVE COVERT | | NEGATIVE COVERT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T | P | T | P | T | P | T | P | T | P | T | P |
| 81Smls plsntly | | | | | ☐ | ☐ | | | ☐ | ☐ | | |
| 82Dsn't sml | | | | | | | ☐ | ☐ | | | ☐ | ☐ |
| 83Nds hd pos | | | | | ☐ | ☐ | | | | | | |
| 84Shks hd neg | | | | | | | ☐ | ☐ | | | | |
| 85Polit pause | | | | | | | | | ☐ | ☐ | | |
| 86Neg pause | | | | | | | | | | | ☐ | ☐ |
| 87Points pos | | | | | ☐ | ☐ | | | | | | |
| 88Points neg | | | | | | | ☐ | ☐ | | | | |
| 89Rais hnd attn | | | | | ☐ | ☐ | | | | | | |
| 90Snps fngrs attn | | | | | | | ☐ | ☐ | | | | |
| 91 Clps hnds glee | | | | | ☐ | ☐ | | | | | | |
| 92Clps hnds crss | | | | | | | ☐ | ☐ | | | | |
| 93Sooths mstk | ☐ | ☐ | | | | | | | | | | |
| 94Rdcls mstk | | | ☐ | ☐ | | | | | | | | |
| 95Humor-jok | ☐ | ☐ | | | | | | | | | | |
| 96No humor-sqlch | | | ☐ | ☐ | | | | | | | | |
| 97Xprss symp,emp | ☐ | ☐ | | | | | | | | | | |
| 98No xprss symp | | | ☐ | ☐ | | | | | | | | |
| 99Ans polit,plsnt | ☐ | ☐ | | | | | | | | | | |
| 100Ans rdly,crssly | | | ☐ | ☐ | | | | | | | | |
| 101Waits polit for t | | | | | | | | | ☐ | ☐ | | |
| 102Intrupts t | | | | ☐ | | | | | | | | |
| 103Waits polit for p | | | | | | | | | ☐ | ☐ | | |
| 104Intrupts p | | | ☐ | ☐ | | | | | | | | |
| 105Touchs pos | | | | | ☐ | ☐ | | | | | | |
| 106Touchs neg | | | | | | | ☐ | ☐ | | | | |
| 107Whsprs polit | ☐ | ☐ | | | | | | | | | | |
| 108Whsprs disruptv | | | ☐ | ☐ | | | | | | | | |
| 109Hlps phys | | | | | ☐ | ☐ | | | | | | |
| 110Prvnts phys | | | | | | | ☐ | ☐ | | | | |
| 111Hlps vrbly | ☐ | ☐ | | | | | | | | | | |
| 112Prvnts vrbly | | | ☐ | ☐ | | | | | | | | |
| 113Lghs w t | | | | | | | | | | ☐ | | |
| 114Lghs at t | | | | | | | | | | | | ☐ |
| 115Lghs w p | | | | | | | | | ☐ | ☐ | | |
| 116Lghs at p | | | | | | | | | | | ☐ | ☐ |
| 117Agrees | ☐ | ☐ | | | | | | | | | | |
| 118Argues | | | ☐ | ☐ | | | | | | | | |
| 119Praises | ☐ | ☐ | | | | | | | | | | |
| 120Shms | | | ☐ | ☐ | | | | | | | | |
| 121Nrml tone | ☐ | ☐ | | | | | | | | | | |
| 122Ylls | | | ☐ | ☐ | | | | | | | | |
| 123Joins situ | | | | | ☐ | ☐ | | | | | | |
| 124Withdrws situ | | | | | | | ☐ | ☐ | | | | |
| 125Dnies req uncond | | | ☐ | ☐ | | | | | | | | |
| 126Rjcts req uncond | | | ☐ | ☐ | | | | | | | | |
| 127Ignrs p req-delib | | | | | | | | | | | ☐ | ☐ |
| 128Ignrs t req-delib | | | | | | | | | | | | ☐ |
| 129Crrcts pos-how to | ☐ | ☐ | | | | | | | | | | |
| 130Crtcz,cnsrs-not to | | | ☐ | ☐ | | | | | | | | |
| 131Dvrts p vrbly | ☐ | ☐ | | | | | | | | | | |
| 132Blcks act (stop) | | | ☐ | ☐ | | | | | | | | |
| 133Sttls prob pos | | | | | | | | | ☐ | ☐ | | |
| 134Avoids sttl prob | | | | | | | | | | | ☐ | ☐ |
| TOTALS: | | | | | | | | | | | | |

TEACHER PUNITIVE-PUPIL DISRUPTIVE BEHAVIORS:Enter Totals under T or P columns

| No.Item Description | T | P | No. Item Description | T | P | No. Item Description | T | P |
|---|---|---|---|---|---|---|---|---|
| 135Ywn,strtch,doz | / | // | /142Sntch,shv,thrw | / | // | /149Scld,tk obj, wrk | / | // / |
| 136Slmp,str n spc | / | // | /143Scffl,defy,fght | / | // | /150Mv phys-chng seat | / | // / |
| 137Doodl,wggl | / | // | /144Swr,tntrm,cry | / | // | /151Sit/stnd inact | / | // / |
| 138Shw off,mk fcs | / | // | /145Run arnd,escape | / | // | /152Sit w oth-neg | / | // / |
| 139Pout,sulkwhne | / | // | /146Isolat slf-hde | / | // | /153Xtra wrk,clnup | / | // / |
| 140Tttl,teas,taunt | / | // | /147Thrtn,warn | / | // | /154Deprv act,mtrl | / | // / |
| 141Isolat in rm | / | // | /148Snd frm rm | / | // | /155Shk,strk,mnhndl | / | // / |

TOTALS: No. of Items:

T__________ P__________ T21 P 21

# APPENDIX C

## APPENDIX C
## DESCRIPTIONS OF RETAINED VIDEO TEACHING TAPES-CODED
### Morrison U.S.O.E.-W.S.U. Project #2780

The following descriptions of retained video-tapes are coded by reel number (for ordering), region number (Detroit Public School designation), district number (old geographical designation by Detroit Public School system), type of school (broadly: suburban, mid-city, inner-city and "Great Cities School Improvement Program" school), organizational plan of the classroom (ungraded, graded, platoon) and by teacher sex and race, pupil predominant race, with grade and subject area description. The video tapes are described in terms of the observational instrument used in the study and reflect these measurements as well as opinions of the author for uses in college classes.

NOTE: While written releases have been obtained for all tapes, it is emphasized that the teachers were guaranteed anonymity of self and school; that tapes are not to be used in evaluation of a particular individual; and that professional judgments on "teaching" methodology would so respect these guarantees.

| REEL # | REGION | DISTRICT | SCHOOL | ORGANIZ PLAN | TEACHER SEX | TEACHER RACE | PUPIL RACE | GRADE OR SUBJECT AREA |
|---|---|---|---|---|---|---|---|---|
| 64B06 | 2 | West | Suburb | UG | F | N | C | Deaf-4 yr. old |

This special class for deaf young children is the only one of its kind (1964) in the Detroit Public School system. Children are deaf but not necessarily retarded. Teacher, teacher-aid, and speech therapist work in class. Teacher shows high amount of leadership although children cannot; high participation by teacher involving children's interaction with her; much assistance and individual contact with children; little negative restriction. Manipulative, demonstrative, and illustrative emphasis in use of materials. The primary teaching emphasis is visual- children have learned to count, follow directions, communicate their needs and understand adults. Children respond well physically and covertly because of verbal handicap.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 65B09 | 6 | Center | Inner | PL | F | C | N | Auditorium |

In a situation limiting audience participation, this teacher provides a high amount of participation for children and much mobility by use of the stage. Center posts as well as seating arrangement inhibit movement; teaching style emphasizes aural-oral with some visual aids. There is a high amount of positive behavior by teacher and pupils. Relates "known" experiences of pupils through recounting of trips, music, stories as well as dramatizations of what they have experienced. Contrast of teachers (Auditorium) in Tape # 87B82.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 66B18 | 7 | East | GreatCities | UG | F | N | N | Remedial Reading |

These children were quite aware of the camera and 'tested' the situation strongly. They were easily distracted and required much patience, diverting, explanation, control and calmness from the teacher. She gave much assistance to children and used a balance of teaching presentations but was limited in a crowded room converted from a storage closet. Some visual materials were provided but with sections of children each 40 minutes, badly in need of remediation, this tape points out reading problems of children as well as limiting factors for teachers.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 67B19 | 7 | East | GreatCities | PL | M | C | N | Science-2,3,6 Grade |

Outstanding portions of this film are the high degree of encouragement to children to participate in experiments, illustration, or handling of materials; high mobility of teacher and pupils; and positive teacher affectivity. Teaching style combines lecture, information, questions, answers, text readings, problem solving, manipulation and demonstration by teacher and pupils. Use of materials is both visual and kinesthetic-tactile. The teacher is extremely courteous, calm, secure, cheerful and positive with these children. Varying grade levels and lessons are depicted.

68B21 7 East GreatCitiesGR F C N Second grade

This film was retained to point out problems of differing language patterns. The teacher speaks with a 'European' accent; the children are Negro and instruction in spelling and 'phonics' is not based on the sounds as expressed or heard by all! It is also interesting to note the extremes of high positive attention interlaced with high negative verbalism- a case of "lovin'" and "naggin'"; praising and scolding.

69B22 5 North Suburb GR F N C Basal Reader-Grade 2

The ability of this teacher to handle routine, interuptions, and organization smoothly while keeping children occupied is a feature of this tape. There is strong child participation in reciting and reading with much mobility and individual 'telling' by the teacher but the teaching style is more traditional hearing than actual teaching. Both visual and kinesthetic materials are used with verbal praise and encouragement to children while still "holding them to" the task at hand with checking of assigned work tasks.

70B31 9 South GreatCitiesUG F C C Special B:Art

These children are listed as young, special "educable" children. Individual contact with pupils, freedom of movement in the classroom, a variety of prepared materials for use, and assistance from the teacher are outstanding. Explanations and showing by demonstration were predominant; of the 96 teachers taped for this project, this teacher scored highest in positive aspects of interaction with children.

71B34 9 South GreatCitiesUG F N C First grade

Display and use of visual aids are predominant in this room. During the taping a stray kitten was brought in from an alley(December). The manner in which the teacher handled this extra-curricular incident and the reaction of the children is delightful- a teachable event!

72B40 3 West Midcity GR F C N Reading groups-First grade

In beginning reading groups, much information, sharing and skills are stressed; children are encouraged to manipulate and 'show that' through use of charts, blackboard, objects, songs and games. Visual emphasis predominates with a delightful teacher sense of humor emphasizing each child's contribution through praise. Each had "turns" yet worked well independently in seat groups.

73B45 1 SouthwestMidcity GR M N C Fifth grade: Culminating program

From the opening session of "From little acorns..." to the culminating Boy Scout Court of Honor program for children of an economically deprived area stressed 'values' in a school setting. Interesting, too, is the manner in which children took over their own group as the teacher circulated to help others. Courtesy, integrity and contribution are continually emphasized with high positive affectivity in teacher and pupil intereaction. Teacher furnished ceremony materials as children could not afford total or parts of uniforms!

74B47 1 SouthwestMidcity GR M C N Sixth grade: Math

The major portion of class time was spent on mathematics. Teacher assistance was excellent as he circulated about the room constantly helping. He structured problem solving situations on the blackboard and with time lines. Text centered situation with apparent teacher-pupil positive rapport.

75B49 1 SouthwestMidcity PL M N N Social Studies

Two sections of Social Studies classes in project activities are shown with outstanding teacher assistance and circulation about the room for individual help. Pupils are also encouraged to freely help others and gather resource materials. Much demonstration, illustration/manipulation of maps, paper and charts, with an individualized approach; excellent teacher-pupil rapport.

## APPENDIX C (continued)

78B53 9 SoutheastInnercityGR F N N Homeroom:Soc.Stud., Reading-Grade 5

Teacher shows many techniques of teaching word meaning: picture clue, multiple meanings, word associations, repetition and use of context. High stress on vocabulary prior to presentation of content. Teacher reports this class did not know (September) concepts of city, state, nation- directions; now (January) children are able to handle ideas regarding continents, nations, colonies, historical time, direction, etc. High use of graphic aids in bulletin boards prepared by children, felt boards, maps, charts, blackboard- combined with pupil oral reports, skits and choral speaking. Fast-paced sessions of questions and answers with teacher repetition of correct pronunciation or responses for inner city children.

79B59 5 North Suburb PL M C C Art:Platoon classes

Classes are working on projects related to academic classes or seasonal topics. Teacher responds to each child, employing the 'what's your idea?' technique, accepting answers or contributions for the idea inherent rather than that any one answer is THE correct one. Continual stress on their thinking and creativity instead of telling them what to do. Running comments establish high rapport with children. Various art media shown.

80B60 COMPOSITE TAPE OF THREE SCIENCE TEACHERS-2 SUBURBAN-1 MID CITY AREA

This tape is a composite of three teachers with varying techniques. The first teacher employs the demonstration and pupil construction of science experiment material with written follow-up in groups; the other two men demonstrate the "inquiry" method in which 1)the problem is demonstrated by the teacher; 2) the pupils begin to question, 3) the teacher only answers 'yes', 'no', or 'frame your question more clearly' and 4) pupils arrive at the generalization or principle demonstrated. One child continues the questioning until he is unable to construct pertinent questions and is then replaced by another questioner. These teachers state the hardest part of this method is to let pupils "think" and not supply answers. A disadvantage is that the slower, uninterested, inattentive student "loses out" and the verbally adept child often dominates the whole session. The last section of the tape shows third grade children building their own electrical circuits.

81B67 8 East Midcity GR F C N Homeroom-Grade 5

A highly text-centered class with academic presentations by teacher and pupil recitation. Questioning, circulating, checking, reminding, and directions are paramount in spelling, arithmetic, language and reading areas. Teacher is business-like and organized and encourages this in children. Stress on work habits for these Fifth grade children.

82B75 1 SouthwestMidcity GR F N C Kindergarten

This teacher uses and insists on complete sentences, recognizes each child by name and contribution, and smoothly shifts from activities. Numbers, weather, counting, oral language, room responsibilities, word cards and games and science demonstrations are provided. The teacher's sense of humor and cheerfulness are outstanding; pupils show a high degree of involvement with little negative restriction necessary.

83B76 3 West Midcity PL M N C Art:Platoon

The teacher, with older children, employs little leadership or authority but rather turns the questions and decisions to the students. He participates and assists groups and individuals but little foreceful direction is noted except for control in a crowded room with classes meeting once a week. His manner is more thoughtful and positive than negative but both elements are present. His use of resource personnel at the end of the tape is too long but class attention is courteously sustained. Good contrast in teacher personality to Tape # 79B59.

## APPENDIX C (continued)

84B77 9 South GreatCitiesGR F N N Second grade:Basal

High vocabulary development in the basal reader context for second grade children is shown in contrast to Tape #69B22(smooth organization but little teaching). Repetition in a variety of ways to reinforce word meanings are offered by a well prepared teacher. Children are "organized" and "know quite well" what to do while the teacher assists others. Correct oral reading and pronunciation are stressed through speaking, picture clues, phrases, chart and blackboard work and verifying by the "place in the book". Each child participates in reading with a text, question and answers, workbook emphasis and supplemental visual aids.

85B78 9 South GreatCitiesGR F N N Third grade Homeroom

An "academic" pattern, based on whole class teaching and texts, are shown with much teacher assistance in explanation. The teacher moves freely but children are "anchored" and concerned mainly with books. An interesting deviation is the creative writing section where children bring in "things that mean something to me" to write about: baby shoes, new sneakers, a comb, a toothbrush, etc. In an economically deprived area, possessions mean much! The teacher's appearance, dress, language, and courteous behavior are good models for the children.

86B80 4 Center InnerCity GR M C N Sixth Grade Homeroom

A former college teacher, this man prefers to teach "inner city" children stressing values in the development of human relations. Mobility, assistance, and respect for individuals are stressed in this tape in content areas for Sixth grade pupils.

87B82 4 Center Midcity PL M N N Auditorium

School is labeled as "in transition": Children's parents at both ends of poverty-affluent continuum. This auditorium situation includes stress on language patterns and pronunciation, word meaning,inflection, music, poetry, structured discipline and the realities of living: i.e., care of clothes and safety. Teacher makes use of musical background and participates in "lessons" with children. Both positive and negative aspects of handling children in large platoon classes, shifting every 45 minutes, will be noted. Teacher manner in contrast to Tape #65B09.

93B86 8 East Suburb PL M C C Gym classes

Video tape of physical education classes with several sections of pupils. Presents both organizational patterns of handling large groups of children safely and the variety of exercises, games, dances and learnings in this situation.

94B88 5 North Suburb UG M N N Special A Boys

With this special education class the teacher is calm, poised, adult, supportive, helpful and makes excellent use of voice and language. It would be particularly useful to compare this tape with Tape #109B96 (following description) for diametrically opposed methods of handling children of the same type in the same school. This present teacher presents vocabulary of story by pictures, in phrases orally and on the board, relates to what pupils do know, sets up purposes for reading, and follows up by recognition of contributions. His presentation of "new Math", while overly long,results in surprisingly good pupil comprehension gained through board work and repetition.

109B96 5 North Suburb UG M C N Jr. Ungraded Boys

Little or no help is offered to children "fumbling" in oral reading other than the "guess again" or "No, you're wrong" response. A "game" of arithmetic played on a pupil constructed board is little more than competitive; the penalty of homework is based on the number of wrong answers all week- the more wrong, the more homework in a population of children who need "special help" in learning and whose parents may be unable to assist the child at home! This tape should be shown with Tape #94B88 to contrast positive teaching and negative "non-teaching".

95B89 5 North Suburb GR F C N Third Grade Homeroom

An "academic, book-centered" class of third grade children. The teacher uses strong leadership techniques, not much mobility, visual or supplementary materials, and little other than verbal "telling" the words. A vascillation between positive approval and praise with negative reproval will be noted. The pupils seem more to be presenting an oral reading program than learning in various content areas.

99B90 5 North Midcity UG M N N Special B class

These children, by tested placement, are working at a low third grade reading level. The teacher makes much use of individual recognition, informal conversations, much pupil-teacher talking and movement about the room. The teacher continually changes position for assistance, control and prevention of disruptions and loss of attention. Little evidence of restriction will be noted as well as little "problem-solving". Most of the emphasis is on information and "how to do" tasks. Use of visual aids is limited in a "converted", poorly equipped classroom. The major demand on the teacher is from children who need continual support and attention.

100B91 9 South InnercityUG M N N Special A class

In one of the oldest schools of the city, the children "work" at tasks presumably related to needs; arithmetic is based on purchasing used cars and monthly payments; purchase of washing machines, etc. Individual help is constant. Teacher must assume custodial care of children at lunch time, on the playground, in the halls, and to and from the school bus maintaining a check on their ability to function on school property with other children. Very supportive to children-exemplary male figure.

101B92 9 South InnercityUG M N N Special A class

Outstanding planning by the teacher with outstanding equipment facilities for special education children in same school as previous tape #100B91. Cooking area, sewing machines, woodworking tools, dining tables, and art facilities are present. Four groups of children are simultaneously involved in preparing a meal (to be eaten), making placemats and setting tables, sewing clothes, working with power saws, and learning names and uses of tools. Tasks are accomplished successfully, smoothly, and with a minimum of distraction- all the more outstanding considering tested abilities of children and the presence of camera. Several sections of children, as seen on the tape, are handled in this program in this manner.

108B93 5 North InnercityPL M C N Spanish classes

A fast-paced foreign language class with a bi-lingual teacher with oral and repetitive emphasis. Out of the ordinary in that the teacher does not follow the usual aural-oral method of teaching. He stated he felt these children need to handle books, follow visually with their eyes, to obtain support from picture clues as well as auditory repetition and, because of "inner city" population, to succeed in an area strong in rhythm and repetition when other academic successes have not been obtained. The structure of the class indicates an implies discipline of the classic "teacher-master" type but its success seems demonstrated in the abilities of these children who were taped only 6 months after beginning Spanish.

# APPENDIX D

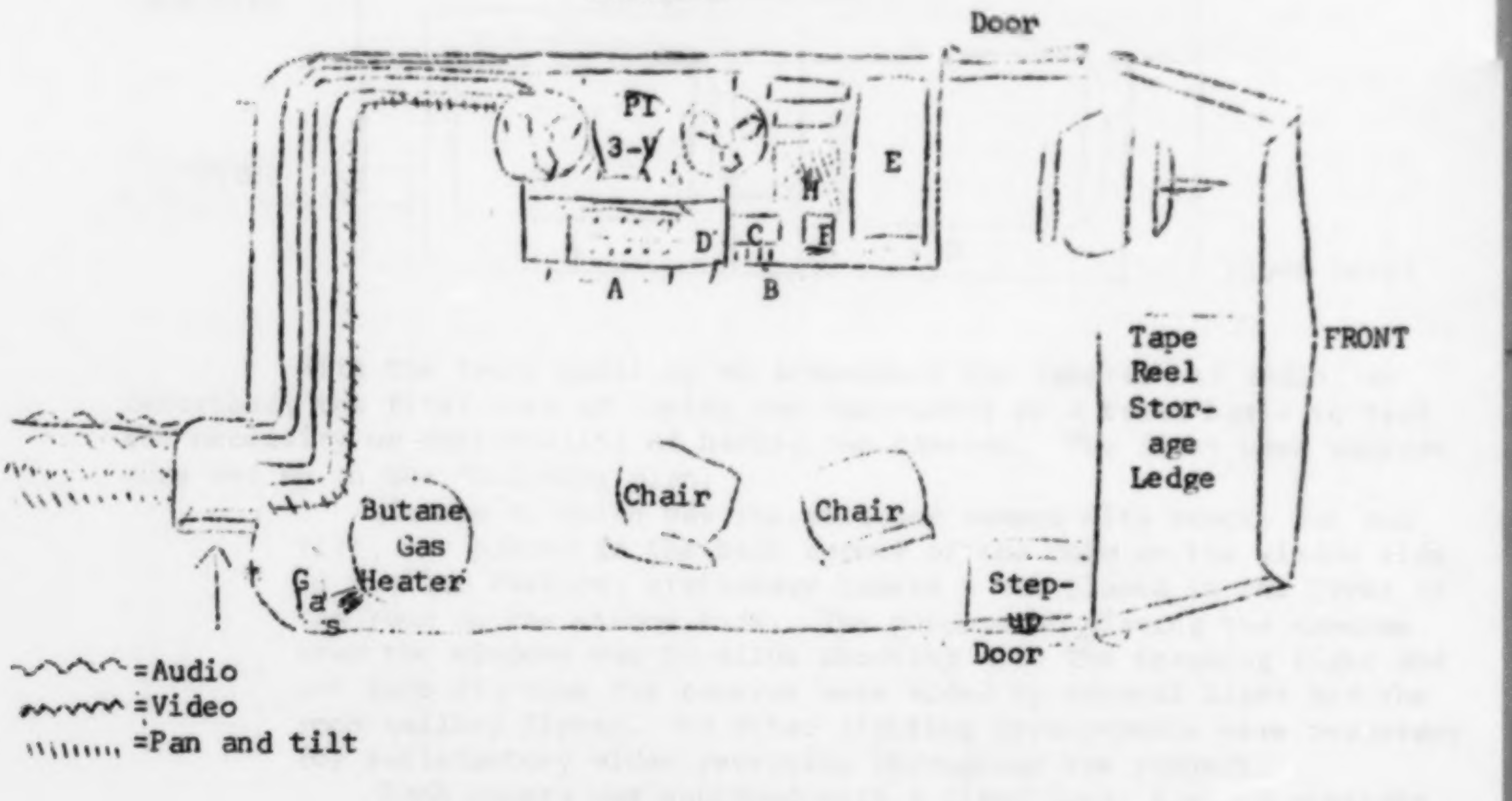
## APPENDIX D

## VIDEO TAPE OBSERVATIONAL EQUIPMENT AND SET-UP PROCEDURES- PROJECT #2780

Video tape observational equipment consisted, initially, of two TC-350 vidicon cameras- one to be mounted on a remote pan and tilt assembly and contained within a soundproof box and the other camera to be mounted upon a stationary tripod to be used for video pick up. Audio consisted of a wireless (transistorized) microphone for the teacher with two stationary microphones for general classroom coverage, a PI- 3V video tape recorder, owned by Wayne State University, was loaned for taping; a small mobile truck, cameras, cables and audio equipment -- contracted from General Television Network of Ferndale, Michigan. This truck transported the equipment as well as housed the monitoring equipment and project personnel during the taping sessions from October to April (1964-65).

Figure A shows the devised layout for the monitoring equipment within the truck. The cables that conducted video, audio and remote control of the pan and tilt mechanisms on the camera were fed through a one-foot square, flap door located in one of the large, double doors at the rear of the truck. These cables were then led to their appropriate point of entry at the console table within the truck. Two chairs for technician and project director, butane gas heater and coffee pot completed the ensemble.

FIGURE A



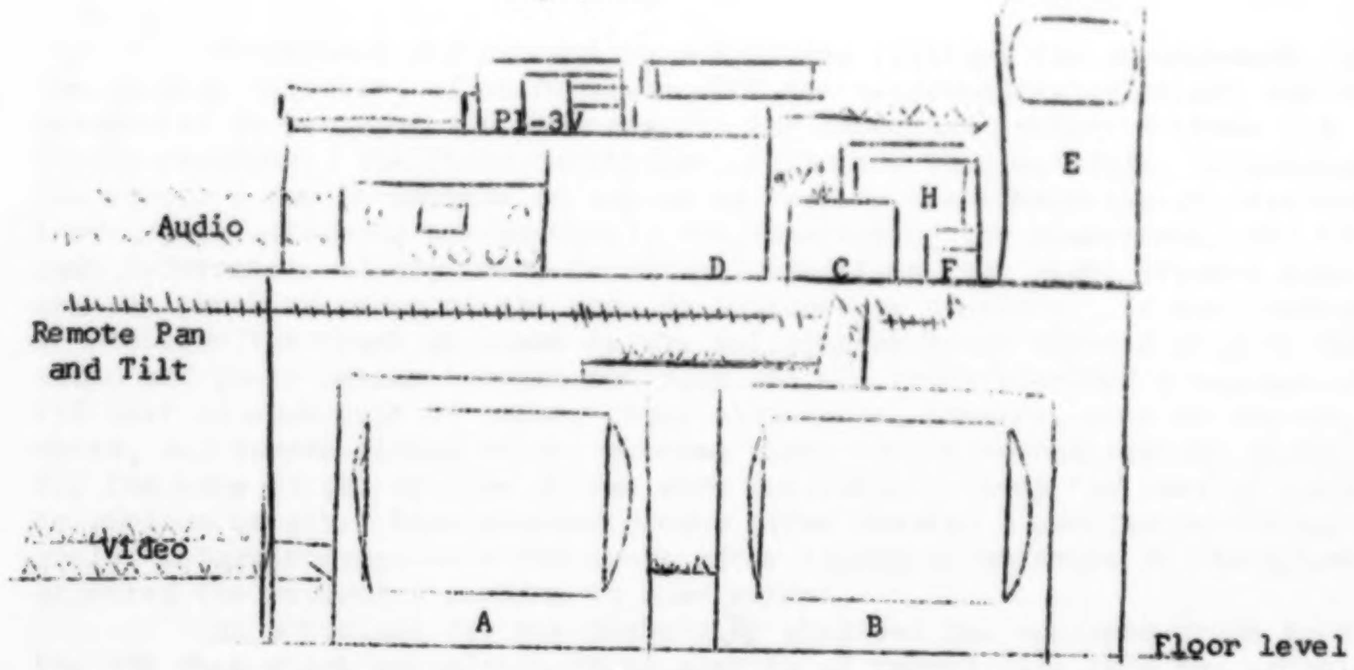
The video feeds were sent each to its own monitor for viewing (A and B). From the monitors the video proceeded to a dry switcher (C) where the desired picture from either camera A or B could be selected for recording (PI-3V) by switching between the two incoming signals to a single video line out. The final stage of video passed through the electronics of the recorder and into the master monitor (E) where it was terminated. This master monitor served as a visual indicator of what was being recorded upon the tape when in the record mode and was also used to monitor tape playback.

Appendix D (continued)

The remote pan and tilt mechanism (F) was connected directly to the pan and tilt head, and controlled through viewing the incoming picture from the camera to which it was attached and then directed for desired picture correction.

Incoming audio was thus from three sources: a wireless mike and two stationary mikes in the classroom. The audio was fed directly into an audio mixer (C) from which any one, or combination of, the three mikes could be directed into the audio channel of the tape recorder (D). The monitoring of this audio was the final stage of the audio system; it took place when the audio out of the recorder was conducted to a speaker amplifier (H) as shown in Figure B.

Figure B



With the truck built up to accomodate the cameras and audio, as described, the first week of taping was contracted on a trial basis to test the necessity or desirability of having two cameras. The first week cameras were set up on the following plan:

Camera A, which was the enclosed camera with remote pan and tilt, was placed in the back corner of the room on the window side. In similar fashion, stationary camera B was placed in the front of the room on the window side. The purpose of placing the cameras near the windows was to allow shooting with the incoming light and not into it; thus the cameras were aided by natural light and the room ceiling lights. No other lighting arrangements were necessary for satisfactory video reception throughout the project.

Each camera was equipped with a fixed lens; i.e., a constant mono-picture magnification. With a one inch lens on camera A, a medium wide angle shot from back to front of the room could be achieved. Camera B utilized a half inch lens achieving a wide angle shot of the room from front to back.

Upon viewing the shots from these two cameras it was noted early in the first week that there was relatively no advantage in having two cameras. The view from the stationary camera provided the same video information from a different angle than the other camera. Switching between the two cameras was distracting because the video level of these two cameras was not the same; correction of this problem was a time-consuming task since the video level controls were located inside the camera and to make a balance adjustment called for removing the camera shell. It was then decided to eliminate the stationary camera B. This altered the interior design of the truck for now it was unnecessary to have preview monitors A and B; video could be fed directly into the tape machine and viewed concurrently on monitor E.

With the subsequent use of one camera (A), which was contained in a soundproof box, two men were required to carry and install it in the classroom. To eliminate this wasted man power and time, General Television Network purchased a new remote pan and tilt head with quiet action gears and motors. This type head was now mounted on a tripod which one man could set up and at the same time do away with any distracting noise caused by the movement of the pan and tilt mechanism during class time.

Procedures for scheduling and taping involved the arrangement, by the project director, of conferences with the recommending principal and the teacher(s) to be taped and arrangements for dates and preferred times for taping sessions. The field technician, following this schedule, telephoned the school a day in advance of taping to confirm the scheduling of teachers (morning or afternoon preferences), the location of the classrooms, and to gain information of any obstructions or objections that might prevent parking the truck as close to the room to be taped as possible. It was important to position the truck as close to the building as space allowed because audio, video and power cables between the room and the truck provided a maximum of 250 feet of each type of cable. Many classrooms, however, were on second, third, and fourth floors which extended these cables to maximum distance. For the sake of set-up time it was more desirable to keep the runs of cable to minimum length. Snow-covered ground often created a problem in drying off cables before storage into the truck after taping as moisture in the truck affected the recording machine to some extent.

On a typical day the technician obtained the equipped truck from the GTN shop which was within 35-40 minutes of travel time from the schools involved in the project. Custodians of the buildings aided in location of rooms, assisted with suggestions for placing the truck (often unlocking playground gates, loosening yard wires) and furnished a convenient outlet for power cable and necessary coffee pot. Equipment was set up in the classroom by the technician and ropes were lowered, when necessary, to pull up the cables for audio and video reception. Most rooms followed a rectangular floor plan and a source of AC power was generally within 25 feet of the equipment or truck. Having positioned the equipment in the room, cables were pulled up from coils on the floor at the rear of the truck, fed through the rear flap-door opening and attached to the rope for hoisting into the room. Once the cables were in the room the power cable for the truck was plugged in and equipment for recording turned on and allowed to warm up.

Prior to taping time, camera adjustment through watching monitors was possible through the technician's use of the wireless mike in the classroom and the project director's communication from the truck via an auxiliary wireless mike. Tape recorder cleaning was also essential because of weather conditions (moisture and dust). Other adjustments were sometimes necessary due to police radio, local radio station, and steel structural interferences.

With the equipment in working order, the teacher was furnished a wireless mike suspended from a circular cord placed around the neck and 'anchored' by a cord encircling the waist. Metal jewelry or tie clips had to be removed because of their interference with sound through this type of microphone. Final positioning of the stationary classroom mikes was decided by the teacher on the basis of what kind of activity and where the teacher planned to spend the majority of time with the pupils. Thus mikes could be set to pick up the focal point of activity from pre-determined areas.

During this set-up activity, the project director invited the principal and the teacher to the truck to answer any questions, demonstrate the use of the equipment or solve any unexpected problems of schedule change. Only the written permission of the teacher entitled any others (including administrators) to view her "teaching" through monitors while taping was in progress. This seemed to be an important part of the professional relationships guaranteed during the project and was rigidly adhered to with all teachers. As an added note of interest, more than 126 teachers volunteered for the project and, of the 96 selected, one was withdrawn because of illness and one teacher reversed his decision. These two teachers were replaced from the "pool" of 126 volunteers. Each of the teachers viewed his reel of tape and, with the written release, also provided a verbal agreement for use of the tape in college classes if this tape was retained.

By 8:45 or 12:15 (morning or afternoon session) video recording had commenced to allow for three hours of monitoring observation from which 90 minutes of taping was extracted. The project director handled the tape machine - starting, stopping, erasing or rewinding- as well as the pan and tilt mechanism to control the classroom camera following teacher and pupil movement. The technician made necessary adjustments to the audio reception-handling volume and mixing- and overall operation of the video equipment.

As soon as the reel had been completed, the technician moved the truck, if necessary, to set up for the next room at the school. The teacher just taped was then invited to the truck to view the tape while the equipment was dismantled in her room and re-set for the next session. Power was connected while the set-up was in progress so no time was lost between sessions and guarantee of the teachers' rights to view tapes was honored. Since the project specifically did not seek to evaluate "teaching" the technician often handled the playback and occupied himself with reeling cables so teachers could watch privately without the presence of the "educator" project director.

Volunteer schools provided one to nine teachers per building so several all-week sessions at one school were normal. The same procedures for afternoon sessions were followed with the power cable the last to be pulled so viewing might progress at noon or at school closing time. All previewing of tapes was thus completed before leaving a particular school.

The final step was to label the reels for retention or erasure, tie down equipment to prevent damage in transport and return the truck to the shop for overnight. The balance of the day was spent in marking and storing tapes, erasing those tapes not retained, making quality checks or repairs of equipment and confirming the next scheduled taping- tasks most responsibly completed by Mr. William Seydel, Field Technician, and to whom the author is deeply indebted for the completion of this two-person project as well as the technical knowledge he so aptly imparted.

# APPENDIX E

## APPENDIX E

## MAJOR INTERCORRELATIONS OF TEACHER-PUPIL INTERACTION CATEGORIES

As a supplement to this report, intercorrelations of each of the major aspects of the categories of this study are included as additional knowledge of the relationships between teacher actions, pupil actions, and teacher-pupil interactions of this sample. Because of the large number of variables (89) and over 2,000 intercorrelations, calculations will include only those of significance[1]

### INTERCORRELATIONS AMONG THE INTERACTION CATEGORIES OF THE REVISED OBSERVER SCHEDULE AND RECORD-FORM II

| CLASSROOM ACTIVITIES | TEACHING STYLES PUPIL RESPONSES | SENSORY EMPHASIS | EMOTIONAL CLIMATE | USES OF MATERIALS |
|---|---|---|---|---|
| | | Teacher Leadership | | |
| T. Participation .597 | T. Lecture .419 | P. Visual .347 | T.Pos.Verbal .333 | P. .428 |
| T. Assistance .619 | T. Demonst. .354 | T.Kinesthetic.331 | T.Pos.Phys. .506 | |
| T.Mobility .656 | T.Supplmt. .642 | P.Kinesthetic.436 | P.Pos.Phys. .329 | |
| P.Mobility .276 | P.Supplmt. .325 | | T.Pos.Covert..424 | |
| | | | P.Pos.Covert .295 | |
| | | Pupil Leadership | | |
| P.Participation .535 | P.Recitation.707 | | P.Pos.Phys. .305 | |
| | P.Prob.Solv..333 | | T.Neg.Phys. -.284 | |
| | | | P.Neg. Phys.-.315 | |
| | | | P.Neg.Covert-.283 | |
| | | | T.Punitive -.323 | |
| | | Teacher Participation | | |
| T.Leadership .597 | T.Lecture .592 | T.Kinesthetic.336 | T.Pos.Verbal .481 | |
| P.Participation .598 | T.Prob.Solv. 694 | P.Kinesthetic.364 | P.Pos.Verbal .497 | |
| T.Assistance .646 | P.Prob.Solv .317 | | P.Neg.Verbal-.290 | |
| P.Assistance .527 | T.Demonst. .540 | | T.Pos.Phys. .420 | |
| T. Mobility .583 | P.Demonst. .446 | | P.P.Phys. .471 | |
| P.Mobility .586 | T.Supplmt. .518 | | T.Pos.Covert .460 . | |
| | P.Supplmt. .570 | | P.Pos.Covert .351 | |
| | | Pupil Participation | | |
| P.Leadership .535 | T.Lecture .537 | P.Kinesthetic.304 | T.Pos.Verbal .406 | |
| T.Participation .598 | P.Recitation.664 | | P.Pos.Verbal .567 | |
| P.Assistance .497 | T.Prob.Solv..420 | | T.Neg.Verbal-.279 | |
| P.Mobility .655 | P.Prob.Solv..455 | | P.Pos.Phys. .501 | |
| T.Restriction -.331 | P.Demonst. .541 | | P.Neg.Phys. -.297 | |
| P.Restriction -.290 | P.Supplmt. .612 | | T.Pos.Covert .415 | |
| | | | P.Pos.Covert .407 | |
| | | | T.Neg.Covert-.276 | |
| | | | P.Neg.Covert-.335 | |
| | | | P.Disruptive-.267 | |

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[1] Total case count-96.Total weight sum=96:r=.267 at the .01 level of significance

## APPENDIX E (continued)

### Major Intercorrelations of Teacher-Pupil Interaction Categories

| CLASSROOM ACTIVITIES | TEACHING STYLES PUPIL RESPONSES | SENSORY EMPHASIS | EMOTIONAL CLIMATE | USES OF MATERIAL |
|---|---|---|---|---|
| | **Teacher Assistance** | | | |
| T.Leadership .619 | T.Prob.Solv.442 | T.Visual .325 | T.Pos.Verbal .597 | P. .315 |
| T.Participation.646 | T.Demonstr..606 | T.Kinesth. .367 | P.Pos.Verbal .283 | |
| P.Assistance .374 | P.Demonstr..382 | P.Kinesth. .466 | T.Pos.Phys. .619 | |
| T.Mobility .915 | T.Supplmt. .894 | | P.Pos.Phys. .325 | |
| P.Mobility .518 | P.Supplmt. .595 | | T.Pos.Covert .473 | |
| | | | P.Pos.Covert .284 | |
| | **Pupil Assistance** | | | |
| T.Participation.527 | T.Prob.Solv.564 | T.Aural-Oral.289 | T.Pos.Verbal .378 | |
| P.Participation.497 | P.Prob.Solv.584 | | P.Neg.Phys. -.298 | |
| T.Assistance .374 | T.Demonstr..344 | | | |
| P.Mobility .390 | P.Demonstr..294 | | | |
| | P.Supplmt. .310 | | | |
| | **Teacher Mobility** | | | |
| T.Leadership .656 | T.Prob.Solv.268 | T.Visual .366 | T.Pos.Verbal .621 | |
| T.Participation.583 | T.Demonstr..698 | P.Visual .398 | P.Pos.Verbal .275 | |
| T.Assistance .915 | P.Demonstr..407 | T.Kinesth. .470 | T.Pos.Phys. .732 | |
| P.Mobility .525 | T.Supplmt. .943 | P.Kinesth. .526 | P.Pos.Phys. .321 | |
| | P.Supplmt. .616 | | T.Pos.Covert .568 | |
| | | | P.Pos.Covert .359 | |
| | **Pupil Mobility** | | | |
| T.Leadership .276 | T.Prob.Solv.347 | P.Kinesth. .433 | T.Pos.Verbal .474 | |
| T.Participation.566 | T.Demonstr..433 | | P.Pos.Verbal .318 | |
| P.Participation.655 | P.Demonstr..832 | | T.Pos.Phys. .444 | |
| T.Assistance .518 | T.Supplmt. .481 | | P.Pos.Phys. .398 | |
| P.Assistance .390 | P.Supplmt. .888 | | P.Neg.Phys. -.301 | |
| T.Mobility .525 | | | T.Pos.Covert .465 | |
| T.Restriction -.296 | | | P.Pos.Covert .348 | |
| | | | P.Disruptive-.300 | |
| | **Teacher Restriction** | | | |
| P.Participation-.331 | T.Demonstr-.316 | T.Visual -.298 | T.Pos.Verbal-.481 | T. -.306 |
| P.Mobility .296 | | P.Visual -.269 | P.Pos.Verbal-.336 | P. -.306 |
| | | | T.Neg.Verbal .643 | |
| | | | T.Pos.Phys. -.330 | |
| | | | P.Pos.Phys. -.295 | |
| | | | T.Neg.Phys. .403 | |
| | | | P.Neg.Phys. .287 | |
| | | | T.Pos.Covert-.449 | |
| | | | P.Pos.Covert-.340 | |
| | | | T.Neg.Covert .385 | |
| | | | P.Neg.Covert .396 | |
| | | | P.Disruptive .388 | |

Total case count-96.Total weight sum=96:r=.267 at the .01 level of significance

## APPENDIX E (Continued)

### Major Intercorrelations of Teacher-Pupil Interaction Categories

| CLASSROOM ACTIVITIES | TEACHING STYLES PUPIL RESPONSES | SENSORY EMPHASIS | EMOTIONAL CLIMATE | USES OF MATERIALS |
|---|---|---|---|---|
| Pupil Restriction | | | | |
| P.Participation-.290 | | | T.Neg.Verbal .312 | |
| | | | P.Neg.Verbal .679 | |
| | | | T.Neg.Phys. .365 | |
| | | | P.Neg.Phys. .525 | |
| | | | T.Pos.Covert-.327 | |
| | | | P.Pos.Covert-.296 | |
| | | | T.Neg.Covert .721 | |
| | | | P.Neg.Covert .357 | |
| | | | T.Punitive .357 | |
| | | | P.Disruptive .522 | |
| Teacher Lecture, Question, Answer, Text, Workbook, Recitation Teaching style. | | | | |
| T.Leadership .419 | P.Recitation.489 | | T.Pos.Verbal .420 | |
| T.Participation .592 | T.Prob.Solv..338 | | P.Pos.Phys. .296 | |
| P.Participation .537 | P.Prob.Solv..426 | | | |
| Pupil Question, Answer, Text, Workbook, Recitation Responses | | | | |
| P.Leadership .707 | T.Lecture .487 | | P.Pos.Verbal .369 | |
| P.Participation .664 | P.Prob.Solv..389 | | P.Pos.Phys. .354 | |
| Teacher Problem-Solving/Interpretative Teaching style. | | | | |
| T.Participation .694 | T.Lecture .338 | | P.Pos.Verbal .359 | |
| P.Participation .420 | P.Prob.Solv .370 | | P.Pos.Phys. .285 | |
| T.Assistance .442 | T.Demonstr. .378 | | T.Punitive -.341 | |
| P.Assistance .564 | P.Demonstr. .312 | | | |
| T.Mobility .268 | P.Supplemt. .330 | | | |
| P.Mobility .347 | | | | |
| Pupil Problem-Solving/Interpretative Responses | | | | |
| P.Leadership .333 | T.Lecture .426 | | P.Pos.Verbal .332 | |
| T.Participation .317 | P.Recitation.389 | | P.Neg.Phys. .296 | |
| P.Participation .455 | T.Prob.Solv .370 | | | |
| P.Assistance .584 | | | | |
| Teacher Demonstration, Manipulation, Illustration Teaching style | | | | |
| T.Leadership .354 | T.Prob.Solv .378 | | P.Pos.Verbal .359 | |
| T.Participation .540 | P.Demonstr. .480 | | P.Pos.Phys. .285 | |
| T.Assistance .606 | T.Supplemt. .610 | | T.Punitive -.341 | |
| P.Assistance .344 | P.Supplemt. .441 | | | |
| T.Mobility .698 | | | | |
| P.Mobility .433 | | | | |
| T.Restriction -.316 | | | | |
| Pupil Demonstration, Manipulation, Illustration Responses | | | | |
| T.Participation .446 | T.Prob.Solv..312 | P.Kinesth..424 | T.Pos.Verbal .337 | P. .305 |
| P.Participation .541 | T.Demonstr. .480 | | T.Pos.Phys. .379 | |
| T.Assistance .382 | T.Supplmt. .350 | | P.Pos.Phys. .332 | |
| P.Assistance .294 | P.Supplmt. .776 | | P.Neg.Phys. .311 | |
| T.Mobility .407 | | | T.Pos.Covert .329 | |
| P.Mobility .832 | | | P.Disruptive-.308 | |

Total case count-96.Total weight sum=96:r=.267 at the .01 level of significance

## APPENDIX E (continued)

### Major Intercorrelations of Teacher-Pupil Interaction Categories

| CLASSROOM ACTIVITIES | | TEACHING STYLES PUPIL RESPONSES | | SENSORY EMPHASIS | | EMOTIONAL CLIMATE | | USES OF MATERIALS | |
|---|---|---|---|---|---|---|---|---|---|
| Teacher Supplemental,Enriched,Individualized Teaching style. | | | | | | | | | |
| T.Leadership | .642 | T.Demonstr. | .610 | T.Visual | .348 | T.Pos.Verbal | .582 | T. | .324 |
| T.Participation | .[illegible]18 | P.Demonstr. | .350 | P.Visual | .400 | T.Pos.Phys. | .725 | P. | .396 |
| T.Assistance | .894 | P.Supplemt. | .573 | T.Kinesth. | .413 | P.Pos.Phys. | .304 | | |
| T.Mobility | .943 | | | P.Kinesth. | .514 | T.Pos.Covert | .544 | | |
| P.Mobility | .481 | | | | | P.Pos.Covert | .340 | | |
| Pupil Supplemental,Enriched,Individualized Responses. | | | | | | | | | |
| T.Leadership | .325 | T.Prob.Solv. | .330 | P.Visual | .339 | T.Pos.Verbal | .566 | P. | .394 |
| T.Participation | .570 | T.Demonstr. | .441 | P.Kinesth. | .532 | P.Pos.Verbal | .322 | | |
| P.Participation | .612 | P.Demonstr. | .776 | | | T.Pos.Phys. | .460 | | |
| T.Assistance | .595 | T.Supplemt. | .573 | | | P.Pos.Phys. | .430 | | |
| P.Assistance | .310 | | | | | P.Neg.Phys. | -.321 | | |
| T.Mobility | .616 | | | | | T.Pos.Covert | .529 | | |
| P.Mobility | .888 | | | | | P.Pos.Covert | .380 | | |
| | | | | | | P.Disruptive | -.282 | | |
| Teacher Aural-Oral Emphasis | | | | | | | | | |
| P.Assistance | .289 | | | P.Aural-Oral | .521 | P.Pos.Phys. | .297 | P. | .298 |
| | | | | P.Visual | .290 | T.Punitive | .297 | | |
| Pupil Aural-Oral Emphasis | | | | | | | | | |
| | | | | T.Aural-Oral | .521 | P.Neg.Verbal | -.271 | | |
| | | | | | | P.Neg.Phys. | .458 | | |
| | | | | | | P.Neg.Covert | -.351 | | |
| | | | | | | P.Disruptive | -.292 | | |
| Teacher Visual Emphasis | | | | | | | | | |
| T.Mobility | .366 | T.Demonstr. | .611 | P.Visual | .443 | P.Neg.Verbal | .276 | T. | .960 |
| T.Restriction | -.298 | T.Supplemt. | .348 | T.Kinesth. | .711 | T.Pos.Phys. | .447 | P. | .390 |
| | | | | | | P.Pos.Phys. | .275 | | |
| | | | | | | T. Neg.Phys. | -.311 | | |
| | | | | | | T.Pos.Covert | .272 | | |
| Pupil Visual Emphasis | | | | | | | | | |
| T.Leadership | .347 | T.Demonstr. | .302 | T.Aural-Oral | .290 | T.Pos.Verbal | .277 | T. | .396 |
| T.Assistance | .325 | T.Supplemt. | .400 | T.Visual | .442 | T.Pos.Phys. | .365 | P. | .888 |
| T.Mobility | .398 | P.Supplemt. | .339 | P.Kinesth. | .653 | T.Pos.Covert. | .321 | | |
| T.Restriction | -.269 | | | | | | | | |
| Teacher Kinesthetic Emphasis | | | | | | | | | |
| T.Leadership | .331 | T.Demonstr. | .659 | T.Visual | .711 | T.Pos.Verbal | .271 | T. | .684 |
| T.Participation | .336 | T.Supplemt. | .413 | P.Kinesth. | .388 | T.Pos.Phys. | .506 | | |
| T.Assistance | .367 | | | | | T.Pos.Covert | .323 | | |
| TeacherMobility | .470 | | | | | | | | |
| Pupil Kinesthetic Emphasis | | | | | | | | | |
| T.Leadership | .331 | T.Demonstr. | .313 | P.Visual | .653 | T.Pos.Verbal | .276 | P. | .689 |
| T.Participation | .364 | P.Demonstr. | .424 | T.Kinesth. | .388 | T.Pos.Phys. | .397 | | |
| P.Participation | .304 | T.Supplemt. | .514 | | | T.Pos.Covert | .351 | | |
| T.Assistance | .466 | P.Supplemt. | .532 | | | | | | |
| T.Mobility | .526 | | | | | | | | |
| P.Mobility | .433 | | | | | | | | |

Total case count=96.Total weight sum=96:r=.267 at the .01 level of significance

## APPENDIX E (continued)

### Major Intercorrelations of Teacher-Pupil Interaction Categories

| CLASSROOM ACTIVITIES | TEACHING STYLES PUPIL RESPONSES | SENSORY EMPHASIS | EMOTIONAL CLIMATE | USES OF MATERIALS |
|---|---|---|---|---|
| **Teacher Positive Verbal Behaviors** | | | | |
| T. Leadership .333 | T.Demonstr..435 | P.Visual .277 | P.Pos.Verbal .609 | |
| T.Participation .481 | P.Demonstr..337 | T.Kinesth. .271 | T.Neg.Verbal-.464 | |
| P. Participation.406 | T.Supplemt..582 | P.Kinesth. .276 | T.Pos.Phys. .709 | |
| T.Assistance .597 | P.Supplemt..566 | | P.Pos.Phys. .578 | |
| T.Mobility .621 | | | T.Neg.Phys -.453 | |
| P.Mobility .474 | | | P.Neg.Phys -.366 | |
| T.Restriction -.481 | | | T.Pos.Covert .763 | |
| | | | P.Pos.Covert .628 | |
| | | | T.Neg.Covert-.353 | |
| | | | T.Punitive -.363 | |
| | | | P.Disruptive-.353 | |
| **Pupil Positive Verbal Behaviors** | | | | |
| T.Participation .497 | T.Lecture .420 | | T.Pos.Verbal .609 | |
| P.Participation .567 | P.Recitation369 | | T.Neg.Verbal-.349 | |
| T.Assistance .283 | T.Prob.Solv.359 | | T.Pos.Phys. .409 | |
| P.Assistance .378 | P.Prob.Solv.332 | | P.Pos.Phys. .658 | |
| T.Mobility .275 | P.Supplemt..322 | | T.Pos.Covert .543 | |
| P.Mobility .318 | | | P.Pos.Covert .502 | |
| T.Restriction -.336 | | | T.Neg.Covert-.284 | |
| | | | P.Neg.Covert-.280 | |
| | | | T.Punitive -.345 | |
| **Teacher Negative Verbal Behaviors** | | | | |
| P.Participation-.279 | | | T.Pos.Verbal-.464 | |
| T.Restriction .643 | | | P.Pos.Verbal-.349 | |
| P.Restriction .312 | | | T.Pos.Phys. -.285 | |
| | | | T.Neg.Phys. .689 | |
| | | | P.Neg.Phys. .331 | |
| | | | T.Pos.Covert-.469 | |
| | | | P.Pos.Covert-.279 | |
| | | | T.Neg.Covert .694 | |
| | | | P.Neg.Covert .303 | |
| | | | T.Punitive .652 | |
| **Pupil Negative Verbal Behaviors** | | | | |
| T.Participation-.290 | T.Demonstr..272 | P.Aural-Oral.271 | T.Neg.Phys. .279 | T. .307 |
| P.Restriction .679 | | T.Visual -.276 | P.Neg.Phys. .449 | |
| | | | P.Neg.Covert .746 | |
| | | | P.Disruptive .646 | |
| **Teacher Positive Physical Behaviors** | | | | |
| T.Leadership .506 | T.Demonstr..612 | T.Visual .447 | T.Pos.Verbal .709 | T. .427 |
| T.Participation .420 | P.Demonstr..379 | P.Visual .365 | P.Pos.Verbal .409 | P. .351 |
| T.Assistance .619 | T.Supplemt..725 | T.Kinesth. .506 | T.Neg.Verbal-.285 | |
| T.Mobility .732 | P.Supplemt..460 | P.Kinesth. .397 | P.Pos.Phys. .564 | |
| P.Mobility .444 | | | T.Pos.Covert .755 | |
| | | | P.Pos.Covert .527 | |
| | | | T.Neg.Covert-.275 | |
| | | | P.Disruptive-.283 | |

Total case count=96.Total weight sum=96:r=.267 at the .01 level of significance

## APPENDIX E (continued)

### Major Intercorrelations of Teacher-Pupil Interaction Categories

| CLASSROOM ACTIVITIES | TEACHING STYLES PUPIL RESPONSES | SENSORY EMPHASIS | EMOTIONAL CLIMATE | USES OF MATERIALS |
|---|---|---|---|---|
| Pupil Positive Physical Behaviors | | | | |
| T.Leadership .329 | T.Lecture .296 | T.Visual .275 | T.Pos.Verbal .578 | T. .296 |
| P.Leadership .305 | P.Recitation354 | | P.Pos.Verbal .658 | P. .272 |
| T.Participation .471 | T.Prob.Solv.285 | | T.Pos.Phys. .564 | |
| P.Participation .501 | T.Demonstr..359 | | T.Neg.Phys. -.283 | |
| T.Assistance .325 | P.Demonstr..332 | | T.Pos.Covert .626 | |
| T.Mobility .321 | T.Supplemt..304 | | P.Pos.Covert .584 | |
| P.Mobility .398 | P.Supplemt..430 | | T.Punitive -.336 | |
| T.Restriction -.295 | | | P.Disruptive-.324 | |
| Teacher Negative Physical Behaviors | | | | |
| P.Leadership -.284 | | | T.Pos.Verbal-.453 | |
| T.Restriction .403 | | | P.Pos.Verbal-.253 | |
| P.Restriction .365 | | | T.Neg.Verbal .689 | |
| | | | P.Neg.Verbal .279 | |
| | | | P.Pos.Phys. -.283 | |
| | | | P.Neg.Phys. .497 | |
| | | | T.Pos.Covert-.513 | |
| | | | P.Pos.Covert-.342 | |
| | | | T.Neg.Covert .753 | |
| | | | P.Neg.Covert .297 | |
| | | | T.Punitive .619 | |
| Pupil Negative Physical Behaviors | | | | |
| P.Leadership -.315 | P.Prob.Solv.296 | T.Aural-Oral-.297 | T.Pos.Verbal-.366 | t. .350 |
| P.Participation-.297 | P.Demonstr..311 | P.Aural-Oral.458 | T.Neg.Verbal .331 | P. .337 |
| P.Assistance -.298 | P.Supplemt.-321 | T.Visual -.311 | P.Neg.Verbal .449 | |
| P.Mobility -.301 | | | T.Neg.Phys. .497 | |
| P.Restriction .525 | | | T.Pos.Covert-.362 | |
| | | | P.Pos.Covert-.288 | |
| | | | T.Neg.Covert .510 | |
| | | | P.Neg.Covert .331 | |
| | | | T.Punitive .374 | |
| | | | P.Disruptive .602 | |
| Teacher Positive Covert Behaviors | | | | |
| T.Leadership .424 | T.Demonstr..412 | T.Visual .272 | T.Pos.Verbal .763 | T. .297 |
| T.Participation .460 | P.Demonstr..329 | P.Visual .321 | P.Pos.Verbal .543 | P. .360 |
| P.Participation .415 | T.Supplemt..544 | T.Kinesth. .323 | T.Neg.Verbal-.469 | |
| T.Assistance .473 | P.Supplemt..529 | P.Kinesth. .351 | T.Pos.Phys. .755 | |
| T.Mobility .568 | | | P.Pos.Phys. .621 | |
| P.Mobility .465 | | | T.Neg.Phys. -.513 | |
| T.Restriction -.449 | | | P.Neg.Phys. -.362 | |
| P.Restriction -.327 | | | P.Pos.Covert .710 | |
| | | | T.Neg.Covert-.478 | |
| | | | P.Neg.Covert-.354 | |
| | | | T.Punitive -.398 | |
| | | | P.Disruptive-.283 | |

Total case count=96.Total weight sum=96: r=.267 at the .01 level of significance

## APPENDIX E (continued)

### Major Intercorrelations of Teacher-Pupil Interaction Categories

| CLASSROOM ACTIVITIES | TEACHING STYLES PUPIL RESPONSES | SENSORY EMPHASIS | EMOTIONAL CLIMATE | USES OF MATERIALS |
|---|---|---|---|---|
| **Pupil Positive Covert Behaviors** | | | | |
| T.Leadership .295 | T.Demonstr. .304 | | T.Pos.Verbal .628 | |
| T.Participation .351 | T.Supplemt. .340 | | P.Pos.Verbal .502 | |
| P.Participation .407 | P.Supplemt. .380 | | T.Neg.Verbal-.279 | |
| T.Assistance .284 | | | T.Pos.Phys. .527 | |
| T.Mobility .359 | | | P.Pos.Phys. .584 | |
| P.Mobility .348 | | | T.Neg.Phys. -.342 | |
| T.Restriction -.340 | | | P.Neg.Phys. -.288 | |
| P.Restriction -.296 | | | T.Pos.Covert .710 | |
| | | | T.Neg.Covert-.268 | |
| | | | T.Punitive -.299 | |
| | | | P.Disruptive-.323 | |
| **Teacher Negative Covert Behaviors** | | | | |
| P.Participation-.276 | | | T.Pos.Verbal-.353 | |
| T.Restriction .385 | | | P.Pos.Verbal-.284 | |
| P.Restriction .387 | | | T.Neg.Verbal .694 | |
| | | | T.Pos.Phys. -.275 | |
| | | | T.Neg.Phys. .753 | |
| | | | P.Neg.Phys. .510 | |
| | | | T.Pos.Covert-.478 | |
| | | | P.Pos.Covert-.268 | |
| | | | P.Neg.Covert .353 | |
| | | | T.Punitive .361 | |
| **Pupil Negative Covert Behaviors** | | | | |
| P.Leadership -.283 | | P.Aural-Oral-.351 | P.Pos.Verbal-.280 | |
| P.Participation-.335 | | | T.Neg.Verbal .303 | |
| T.Restriction .396 | | | P.Neg.Verbal .746 | |
| P.Restriction .721 | | | T.Neg.Phys. .297 | |
| | | | P.Neg.Phys. .331 | |
| | | | T.Pos.Covert-.354 | |
| | | | T.Neg.Covert .353 | |
| | | | P.Disruptive .796 | |
| **Teacher Punitive Behaviors** | | | | |
| P.Participation-.323 | T.Prob.Solv-.341 | T.Aural-Oral .297 | T.Pos.Verbal-.363 | |
| P.Restriction .357 | | | P.Pos.Verbal-.345 | |
| | | | T.Neg.Verbal .652 | |
| | | | P.Pos.Phys. .336 | |
| | | | T.Neg.Phys. .619 | |
| | | | P.Neg.Phys. .374 | |
| | | | T.Pos.Covert-.398 | |
| | | | P.Pos.Covert-.299 | |
| | | | T.Neg.Covert .361 | |

Total case count=96.Total weight sum=96: r=.267 at the .01 level of significance

## APPENDIX E (Continued)

### Major Intercorrelations of Teacher-Pupil Interaction Categories

| CLASSROOM ACTIVITIES | TEACHING STYLES PUPIL RESPONSES | SENSORY EMPHASIS | EMOTIONAL CLIMATE | USES OF MATERIALS |
|---|---|---|---|---|
| **Pupil Disruptive Behaviors** | | | | |
| P.Participation-.267 | P.Demonstr.-.308 | T.Aural-Oral-.255 | T.Pos.Verbal-.353 | |
| P.Mobility -.300 | P.Supplemt.-.282 | P.Aural-Oral-.292 | P.Pos.Verbal-.233 | |
| T.Restriction .388 | | | P.Neg.Verbal .646 | |
| P.Restriction .522 | | | T.Pos.Phys. -.283 | |
| | | | P.Pos.Phys. -.324 | |
| | | | P.Neg.Phys. .602 | |
| | | | T.Pos.Covert-.283 | |
| | | | P.Pos.Covert-.323 | |
| | | | P.Neg.Covert .796 | |
| **Teacher Uses of Instructional Materials** | | | | |
| T. Mobility .338 | T.Demonstr. .605 | T.Visual .960 | P.Neg.Verbal-.307 | |
| T. Restriction -.306 | T.Supplmt. .324 | P.Visual .396 | T.Pos.Phys. .427 | |
| | | T.Kinesth .684 | P.Pos.Phys. .296 | |
| | | | P.Neg.Phys. -.350 | |
| | | | T.Pos.Covert..297 | |
| **Pupil Uses of Instructional Materials** | | | | |
| T.Leadership .428 | P.Demonstr. .305 | T.Aural-Oral-.299 | T.Pos.Phys. .351 | T. .342 |
| T.Assistance .315 | T.Supplemt. .396 | T.Visual .390 | P.Pos.Phys. .272 | |
| T.Mobility .389 | P.Supplemt. .394 | P.Visual .888 | P.Neg.Phys. -.337 | |
| T.Restriction -.306 | | P.Kinesth. .689 | T.Pos.Covert .360 | |

Total case count=96.Total weight sum=96: r=.267 at the .01 level of significance

# APPENDIX F
# TREND ANALYSIS TABLES

## APPENDIX F

## TABLE 13A-1

## RACIAL DATA TRENDS

| Variable Score Category | Group | Group Mean | Main Trend | C/C | N/N | C/N | N/C |
|---|---|---|---|---|---|---|---|
| | | | | C/CN/NC/NN/C | | | |
| Teacher Leadership | 1 C/C | 85.54 | -5.08 | -- | | | |
| | 2 N/N | 91.91 | 1.29 | | + | | |
| | 3 C/N | 90.38 | - .25 | | | - | |
| | 4 N/C | 94.56 | 3.93 | | | | ++ |
| Pupil Leadership | 1 C/C | 23.53 | -1.77 | - | | | |
| | 2 N/N | 29.17 | 3.86 | | ++ | | |
| | 3 C/N | 25.79 | .48 | | | + | |
| | 4 N/C | 23.00 | -2.31 | | | | -- |
| Teacher Participation | 1 C/C | 154.79 | 6.60 | ++ | | | |
| | 2 N/N | 140.78 | -7.40 | | -- | | |
| | 3 C/N | 142.54 | -5.65 | | | - | |
| | 4 N/C | 154.08 | 5.89 | | | | + |
| Pupil Participation | 1 C/C | 95.79 | -4.74 | - | | | |
| | 2 N/N | 104.96 | 4.43 | | + | | |
| | 3 C/N | 91.04 | -9.49 | | | -- | |
| | 4 N/C | 110.12 | 9.59 | | | | ++ |
| Teacher Assistance | 1 C/C | 99.63 | 8.32 | ++ | | | |
| | 2 N/N | 83.70 | -7.61 | | - | | |
| | 3 C/N | 83.42 | -7.89 | | | -- | |
| | 4 N/C | 97.86 | 6.58 | | | | + |
| Pupil Assistance | 1 C/C | 28.83 | 2.29 | + | | | |
| | 2 N/N | 21.39 | -5.15 | | - | | |
| | 3 C/N | 20.79 | -5.75 | | | -- | |
| | 4 N/C | 34.60 | 8.06 | | | | ++ |
| Teacher Mobility | 1 C/C | 139.75 | 12.90 | + | | | |
| | 2 N/N | 113.57 | -13.29 | | - | | |
| | 3 C/N | 113.25 | -13.60 | | | -- | |
| | 4 N/C | 139.76 | 12.91 | | | | ++ |
| Pupil Mobility | 1 C/C | 82.88 | .05 | + | | | |
| | 2 N/N | 82.43 | - .49 | | - | | |
| | 3 C/N | 70.29 | -12.64 | | | -- | |
| | 4 N/C | 95.86 | 12.63 | | | | ++ |
| Teacher (self) Restriction° | 1 C/C | 3.92 | .98 | --° | | | |
| | 2 N/N | 2.35 | - .59 | | +° | | |
| | 3 C/N | 3.50 | .56 | | | -° | |
| | 4 N/C | 2.00 | - .94 | | | | ++° |
| Pupil (imposed) Restriction° | 1 C/C | 4.08 | -1.04 | +° | | | |
| | N/N | 7.13 | 2.01 | | --° | | |
| | 3 C/N | 4.08 | -1.04 | | | +° | |
| | 4 N/C | 5.28 | .15 | | | | -° |

| Variable Score Category | Group | Group Mean | Main Trend | C/C | N/N | C/N | N/C |
|---|---|---|---|---|---|---|---|
| | | | | C/CN/NC/NN/C | | | |
| Teacher Aural-Oral | 1 C/C | 1.58 | - .04 | - | | | |
| | 2 N/N | 2.00 | .38 | | ++ | | |
| | 3 C/N | 1.25 | - .38 | | | -- | |
| | 4 N/C | 1.68 | .05 | | | | + |
| Pupil Aural-Oral | 1 C/C | 1.50 | - .33 | -- | | | |
| | 2 N/N | 2.00 | .17 | | + | | |
| | 3 C/N | 2.33 | .50 | | | ++ | |
| | 4 N/C | 1.52 | - .31 | | | | - |
| Teacher Visual | 1 C/C | 9.71 | - .59 | -- | | | |
| | 2 N/N | 11.17 | .87 | | ++ | | |
| | 3 C/N | 10.58 | .28 | | | + | |
| | 4 N/C | 9.80 | - .50 | | | | - |
| Pupil Visual | 1 C/C | 8.83 | - .03 | + | | | |
| | 2 N/N | 9.00 | .20 | | ++ | | |
| | 3 C/N | 8.67 | - .14 | | | -- | |
| | 4 N/C | 8.72 | - .08 | | | | - |
| Teacher Kinesthetic/ Tactile | 1 C/C | 4.21 | - .22 | -- | | | |
| | 2 N/N | 4.35 | - .08 | | + | | |
| | 3 C/N | 4.33 | - .09 | | | - | |
| | 4 N/C | 4.80 | .37 | | | | ++ |
| Pupil Kinesthetic/ Tactile | 1 C/C | 3.75 | - .27 | - | | | |
| | 2 N/N | 4.43 | .41 | | ++ | | |
| | 3 C/N | 3.67 | - .35 | | | -- | |
| | 4 N/C | 4.24 | .22 | | | | + |
| Teacher Total Uses of Materials | 1 C/C | 10.42 | - .73 | -- | | | |
| | 2 N/N | 12.17 | 1.03 | | ++ | | |
| | 3 C/N | 11.38 | .23 | | | + | |
| | 4 N/C | 10.68 | - .47 | | | | - |
| Pupil Total Uses of Materials | 1 C/C | 9.21 | - .26 | - | | | |
| | 2 N/N | 9.87 | .40 | | ++ | | |
| | 3 C/N | 9.75 | .28 | | | + | |
| | 4 N/C | 9.08 | - .39 | | | | -- |
| Teacher Quotient Scores | 1 C/C | 971.88 | 65.16 | ++ | | | |
| | 2 N/N | 858.00 | 4̄8.72 | | - | | |
| | 3 C/N | 830.79 | 7̄5.93 | | | -- | |
| | 4 N/C | 961.88 | 55.16 | | | | + |
| Pupil Quotient Scores | 1 C/C | 449.92 | 6.64 | - | | | |
| | 2 N/N | 502.39 | _9.11 | | + | | |
| | 3 C/N | 445.71 | 47.57 | | | -- | |
| | 4 N/C | 524.20 | 30.92 | | | | ++ |

See Next Page for Remainder of Table

° Symbol inversely interpreted in negative value categories. See text, page 30, Ch.IV.

## APPENDIX F

## TABLE 13A-1 (continued)

## RACIAL DATA TRENDS

| Variable Score Category | Group | Group Mean | Main Trend | C/CN/NC/NN/C |
|---|---|---|---|---|
| Teacher Lect. | 1 C/C | 68.54 | -4.06 | -- |
| Ques.Ans.Txt | 2 N/N | 78.74 | 6.13 | ++ |
| Workbook, | 3 C/N | 70.88 | -1.73 | - |
| Recitation | 4 N/C | 72.52 | - .08 | + |
| Pupil Ques. | 1 C/C | 60.83 | -5.20 | -- |
| Ans.Text | 2 N/N | 74.13 | 8.10 | ++ |
| Workbook | 3 C/N | 61.92 | -4.11 | - |
| Recitation | 4 N/C | 67.52 | 1.49 | + |
| Teacher | 1 C/C | 41.88 | 4.23 | ++ |
| Problem | 2 N/N | 37.96 | .31 | - |
| Solving,In- | 3 C/N | 31.50 | -6.15 | -- |
| terpretation | 4 N/C | 39.20 | 1.55 | + |
| Pupil | 1 C/C | 18.33 | - .21 | + |
| Problem | 2 N/N | 17.26 | -1.28 | - |
| Solving, In- | 3 C/N | 16.79 | -1.75 | -- |
| terpretation | 4 N/C | 21.60 | 3.06 | ++ |
| Teacher | 1 C/C | 38.04 | 3.55 | ++ |
| Demonstration | N/N | 30.22 | -4.27 | -- |
| Manipulation | 3 C/N | 31.88 | -2.61 | - |
| Illustration | 4 N/C | 37.52 | 3.03 | + |
| Pupil | 1 C/C | 32.38 | 2.60 | ++ |
| Demonstration | N/N | 27.26 | -2.31 | - |
| Manipulation | 3 C/N | 26.25 | -3.32 | -- |
| Illustration | 4 N/C | 32.20 | 2.63 | + |
| Teacher | 1 C/C | 89.79 | 2.77 | + |
| Supplemental | 2 N/N | 80.04 | -6.98 | - |
| Enriched | 3 C/N | 79.46 | -7.56 | -- |
| Individualized | N/C | 98.04 | 11.02 | ++ |
| Pupil | 1 C/C | 43.75 | 1.86 | + |
| Supplemental | 2 N/N | 41.57 | - .32 | - |
| Enriched | 3 C/N | 37.58 | -4.30 | -- |
| Individualized | N/C | 44.52 | 2.63 | ++ |
| Teacher | 1 C/C | 159.67 | 17.66 | ++ |
| Positive | 2 N/N | 135.04 | - 6.97 | - |
| Verbal | 3 C/N | 127.71 | -14.30 | -- |
|  | 4 N/C | 145.20 | 3.19 | + |
| Pupil | 1 C/C | 31.21 | -1.11 | - |
| Positive | 2 N/N | 34.96 | 2.54 | + |
| Verbal | 3 C/N | 27.08 | -5.37 | -- |
|  | 4 N/C | 36.36 | 3.94 | ++ |
| Teacher | 1 C/C | 24.26 | -3.46 | ++° |
| Negative | 2 N/N | 27.70 | - .22 | -° |
| Verbal° | 3 C/N | 34.79 | 6.88 | --° |
|  | 4 N/C | 24.84 | -3.08 | +° |

| Variable Score Category | Group | Group Mean | Main Trend | C/CN/NC/NN/C |
|---|---|---|---|---|
| Pupil | 1 C/C | 1.71 | -1.19 | +° |
| Negative | 2 N/N | 4.43 | 1.54 | --° |
| Verbal° | 3 C/N | 1.50 | -1.40 | ++° |
|  | 4 N/C | 3.96 | 1.06 | -° |
| Teacher | 1 C/C | 69.08 | 6.76 | ++ |
| Positive | 2 N/N | 58.22 | -4.11 | - |
| Physical | 3 C/N | 57.33 | -4.99 | -- |
|  | 4 N/C | 64.40 | 2.08 | + |
| Pupil | 1 C/C | 42.79 | 1.44 | ++ |
| Positive | 2 N/N | 42.78 | 1.43 | + |
| Physical | 3 C/N | 40.04 | -1.31 | - |
|  | 4 N/C | 39.92 | -1.43 | -- |
| Teacher | 1 C/C | 4.25 | -1.00 | ++° |
| Negative | 2 N/N | 5.04 | - .21 | +° |
| Physical° | 3 C/N | 5.83 | .58 | -° |
|  | 4 N/C | 5.84 | .59 | --° |
| Pupil | 1 C/C | .96 | .02 | +° |
| Negative | 2 N/N | 1.26 | .32 | --° |
| Physical° | 3 C/N | .54 | - .10 | ++° |
|  | 4 N/C | 1.00 | .06 | -° |
| Teacher | 1 C/C | 37.83 | 1.39 | + |
| Positive | 2 N/N | 32.91 | -3.53 | -- |
| Covert | 3 C/N | 35.04 | -1.41 | - |
|  | 4 N/C | 39.72 | 3.27 | ++ |
| Pupil | 1 C/C | 22.92 | 1.92 | ++ |
| Positive | 2 N/N | 20.00 | -1.00 | -- |
| Covert | 3 C/N | 20.33 | - .67 | - |
|  | 4 N/C | 20.72 | - .28 | + |
| Teacher | 1 C/C | 3.67 | - .93 | ++° |
| Negative | 2 N/N | 5.61 | 1.01 | --° |
| Covert° | 3 C/N | 4.46 | - .14 | +° |
|  | 4 N/C | 4.68 | .09 | -° |
| Pupil | 1 C/C | .25 | - .26 | ++° |
| Negative | 2 N/N | .91 | .40 | --° |
| Covert° | 3 C/N | .63 | .11 | -° |
|  | 4 N/C | .28 | - .23 | +° |
| Teacher | 1 C/C | 1.67 | - .43 | ++° |
| Punitive° | 2 N/N | 2.26 | .17 | -° |
|  | 3 C/N | 2.50 | .41 | --° |
|  | 4 N/C | 1.96 | - .13 | +° |
| Pupil | 1 C/C | 3.13 | - .34 | +° |
| Disruptive° | 2 N/N | 4.52 | 1.05 | --° |
|  | 3 C/N | 2.83 | - .64 | ++° |
|  | 4 N/C | 3.44 | - .03 | -° |

°Symbol inversely interpreted in negative value categories, See text, page 30, Ch.IV.

## APPENDIX F

### TABLE 13A-2

### SOCIO-ECONOMIC-GEOGRAPHICAL DATA TRENDS

| TEACHER SAMPLES | | | | | | | | PUPIL SAMPLES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Group Mean | Main Trend | 1 GC | 2 IC | 3 MC | 4 SU | Variable Score Category | Group | Group Mean | Main Trend | 1 GC | 2 IC | 3 MC | 4 SU |
| 1 GC | 97.47 | 6.85 | ++ | | | | Leadership | 1 GC | 22.47 | - 3.66 | -- | | | |
| 2 IC | 96.04 | 5.41 | | + | | | | 2 IC | 28.52 | 2.39 | | ++ | | |
| 3 MC | 93.79 | 3.17 | | | - | | | 3 MC | 23.70 | - 2.43 | | | - | |
| 4 SU | 78.54 | -12.09 | | | | -- | | 4 SU | 27.79 | 1.66 | | | | + |
| 1 GC | 141.94 | - 6.25 | - | | | | Participation | 1 GC | 98.88 | - 1.65 | - | | | |
| 2 IC | 144.41 | - 3.78 | | + | | | | 2 IC | 98.56 | - 1.98 | | -- | | |
| 3 MC | 169.58 | 21.40 | | | ++ | | | 3 MC | 102.79 | 2.26 | | | ++ | |
| 4 SU | 137.29 | -10.90 | | | | -- | | 4 SU | 101.50 | .97 | | | | + |
| 1 GC | 92.31 | 1.11 | + | | | | Assistance | 1 GC | 27.06 | .52 | + | | | |
| 2 IC | 87.41 | - 3.89 | | - | | | | 2 IC | 23.56 | - 2.99 | | -- | | |
| 3 MC | 103.04 | 11.74 | | | ++ | | | 3 MC | 30.63 | 4.08 | | | ++ | |
| 4 SU | 84.32 | - 6.98 | | | | -- | | 4 SU | 25.61 | - .93 | | | | - |
| 1 GC | 132.47 | 5.62 | + | | | | Mobility | 1 GC | 82.65 | - .28 | - | | | |
| 2 IC | 122.41 | - 4.45 | | - | | | | 2 IC | 83.26 | .33 | | + | | |
| 3 MC | 137.75 | 10.90 | | | ++ | | | 3 MC | 86.54 | 3.61 | | | ++ | |
| 4 SU | 118.39 | - 8.46 | | | | -- | | 4 SU | 79.68 | - 3.25 | | | | -- |
| 1 GC | 4.21 | - .19 | +° | | | | Restriction° | 1 GC | 5.33 | - 1.60 | ++° | | | |
| 2 IC | 4.27 | - .14 | | -° | | | | 2 IC | 8.94 | 2.01 | | --° | | |
| 3 MC | 3.59 | - .82 | | | ++° | | | 3 MC | 6.55 | - .38 | | | -° | |
| 4 SU | 5.44 | 1.04 | | | | --° | | 4 SU | 6.48 | - .45 | | | | +° |
| 1 GC | 69.41 | - 3.19 | - | | | | Lecture,Question and Answer, Text,Workbook, Recitation | 1 GC | 62.41 | - 3.62 | - | | | |
| 2 IC | 76.00 | 3.40 | | + | | | | 2 IC | 69.15 | 3.12 | | ++ | | |
| 3 MC | 80.33 | 7.73 | | | ++ | | | 3 MC | 62.25 | - 3.78 | | | -- | |
| 4 SU | 64.64 | - 7.96 | | | | -- | | 4 SU | 68.46 | 2.43 | | | | + |
| 1 GC | 35.25 | - 2.29 | - | | | | Problem Solving Interpretation | 1 GC | 19.94 | 1.20 | - | | | |
| 2 IC | 32.85 | - 4.79 | | -- | | | | 2 IC | 13.74 | - 5.00 | | -- | | |
| 3 MC | 45.83 | 8.19 | | | ++ | | | 3 MC | 21.39 | 2.65 | | | ++ | |
| 4 SU | 36.64 | - 1.00 | | | | + | | 4 SU | 20.64 | 1.91 | | | | + |
| 1 GC | 37.06 | 2.57 | + | | | | Demonstration Manipulation Illustration | 1 GC | 34.25 | 4.37 | ++ | | | |
| 2 IC | 32.19 | - 2.30 | | - | | | | 2 IC | 25.63 | - 4.25 | | -- | | |
| 3 MC | 38.04 | 3.55 | | | ++ | | | 3 MC | 28.38 | - 1.51 | | | - | |
| 4 SU | 32.11 | - 2.38 | | | | -- | | 4 SU | 32.79 | 2.90 | | | | + |
| 1 GC | 86.41 | 9.39 | ++ | | | | Supplemental Enriched Individualized | 1 GC | 42.47 | .59 | + | | | |
| 2 IC | 87.30 | .28 | | - | | | | 2 IC | 39.89 | - 2.00 | | -- | | |
| 3 MC | 93.04 | 6.02 | | | + | | | 3 MC | 43.58 | 1.70 | | | ++ | |
| 4 SU | 75.89 | -11.13 | | | | -- | | 4 SU | 42.00 | .11 | | | | - |
| 1 GC | 3.33 | - .06 | - | | | | Aural-Oral | 1 GC | 3.11 | - .03 | - | | | |
| 2 IC | 3.73 | .34 | | ++ | | | | 2 IC | 2.95 | - .20 | | -- | | |
| 3 MC | 3.47 | .08 | | | + | | | 3 MC | 3.43 | .29 | | | ++ | |
| 4 SU | 2.80 | - .59 | | | | -- | | 4 SU | 3.14 | .00 | | | | X |

See Next Page for Remainder of Table

GC=Great Cities School IC=Inner city School MC=Mid-city School SU=Suburban School samples

° Symbol inversely interpreted in negative value categories. See text, page 30, Ch.IV.

# APPENDIX F

## TABLE 13A-2 (continued)

## SOCIO-ECONOMIC-GEOGRAPHICAL DATA TRENDS

| TEACHER SAMPLES | | | | | | | | PUPIL SAMPLES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Group Mean | Main Trend | 1 GC | 2 IC | 3 MC | 4 SU | Variable Score Category | Group | Group Mean | Main Trend | 1 GC | 2 IC | 3 MC | 4 SU |
| 1 GC | 11.47 | 1.17 | ++ | | | | Visual | 1 GC | 9.44 | .35 | ++ | | | |
| 2 IC | 9.67 | - .64 | | - | | | | 2 IC | 9.11 | .03 | | + | | |
| 3 MC | 11.21 | .91 | | | + | | | 3 MC | 8.95 | - .13 | | | -- | |
| 4 SU | 9.43 | - .87 | | | | -- | | 4 SU | 8.96 | - .12 | | | | - |
| 1 GC | 5.00 | .48 | ++ | | | | Kinesthetic/ Tactile | 1 GC | 5.19 | .80 | ++ | | | |
| 2 IC | 4.22 | - .30 | | -- | | | | 2 IC | 4.26 | - .13 | | + | | |
| 3 MC | 4.71 | .19 | | | + | | | 3 MC | 4.24 | - .15 | | | - | |
| 4 SU | 4.35 | - .18 | | | | - | | 4 SU | 4.13 | - .26 | | | | -- |
| 1 GC | 145.12 | 3.11 | ++ | | | | Positive Verbal | 1 GC | 29.59 | - 3.17 | - | | | |
| 2 IC | 140.63 | - 1.38 | | -- | | | | 2 IC | 35.48 | 2.72 | | + | | |
| 3 MC | 140.83 | - 1.18 | | | - | | | 3 MC | 36.08 | 3.33 | | | ++ | |
| 4 SU | 142.46 | .45 | | | | + | | 4 SU | 29.07 | - 3.68 | | | | -- |
| 1 GC | 23.41 | - 5.72 | ++° | | | | Negative Verbal° | 1 GC | 3.92 | - .80 | +° | | | |
| 2 IC | 29.24 | .11 | | -° | | | | 2 IC | 5.89 | 1.18 | | --° | | |
| 3 MC | 28.45 | - .68 | | | +° | | | 3 MC | 2.92 | - 1.80 | | | ++° | |
| 4 SU | 33.04 | 3.91 | | | | --° | | 4 SU | 5.29 | .58 | | | | -° |
| 1 GC | 73.06 | 10.74 | ++ | | | | Positive Physical | 1 GC | 41.12 | - .24 | - | | | |
| 2 IC | 62.00 | - .32 | | - | | | | 2 IC | 41.93 | .57 | | + | | |
| 3 MC | 63.67 | 1.34 | | | + | | | 3 MC | 43.92 | 2.56 | | | ++ | |
| 4 SU | 54.96 | - 7.36 | | | | -- | | 4 SU | 38.75 | - 2.60 | | | | -- |
| 1 GC | 5.56 | - 2.20 | ++° | | | | Negative Physical° | 1 GC | 2.00 | - .81 | ++° | | | |
| 2 IC | 7.52 | - .23 | | +° | | | | 2 IC | 2.33 | - .48 | | +° | | |
| 3 MC | 8.40 | .65 | | | -° | | | 3 MC | 3.78 | .97 | | | --° | |
| 4 SU | 8.50 | .75 | | | | --° | | 4 SU | 3.40 | .59 | | | | -° |
| 1 GC | 41.47 | 5.02 | ++ | | | | Positive Covert | 1 GC | 21.53 | .53 | - | | | |
| 2 IC | 35.30 | - 1.15 | | - | | | | 2 IC | 19.19 | - 1.81 | | -- | | |
| 3 MC | 39.33 | 2.99 | | | + | | | 3 MC | 21.79 | .79 | | | ++ | |
| 4 SU | 32.04 | - 4.41 | | | | -- | | 4 SU | 21.75 | .75 | | | | + |
| 1 GC | 6.50 | - .73 | ++° | | | | Negative Covert° | 1 GC | 2.00 | - .33 | X° | | | |
| 2 IC | 6.56 | - .67 | | +° | | | | 2 IC | 4.00 | 1.67 | | --° | | |
| 3 MC | 6.88 | - .35 | | | -° | | | 3 MC | 3.00 | - .33 | | | X° | |
| 4 SU | 8.56 | 1.33 | | | | --° | | 4 SU | 2.14 | - .19 | | | | ++° |
| 1 GC | 3.29 | - .24 | ++° | | | | Punitive-Disruptive° | 1 GC | 4.47 | - .03 | -° | | | |
| 2 IC | 3.64 | .12 | | --° | | | | 2 IC | 4.43 | - .07 | | +° | | |
| 3 MC | 3.62 | .09 | | | -° | | | 3 MC | 4.78 | .28 | | | --° | |
| 4 SU | 3.56 | .04 | | | | +° | | 4 SU | 4.18 | - .32 | | | | ++° |
| 1 GC | 12.00 | .85 | + | | | | Uses of Materials | 1 GC | 10.13 | .56 | ++ | | | |
| 2 IC | 10.78 | - .37 | | - | | | | 2 IC | 9.52 | - .05 | | - | | |
| 3 MC | 12.54 | 1.40 | | | ++ | | | 3 MC | 9.25 | - .32 | | | -- | |
| 4 SU | 9.79 | - 1.36 | | | | -- | | 4 SU | 9.57 | ,00 | | | | + |
| 1 GC | 955.41 | 48.69 | + | | | | Quotient Scores[1] | 1 GC | 482.65 | -10.63 | -- | | | |
| 2 IC | 892.52 | -14.20 | | - | | | | 2 IC | 488.81 | - 4.47 | | + | | |
| 3 MC | 984.00 | 77.28 | | | ++ | | | 3 MC | 514.75 | 21.47 | | | ++ | |
| 4 SU | 824,61 | -82.11 | | | | -- | | 4 SU | 485-64 | - 7.64 | | | | - |

°Symbol inversely interpreted in negative value categoires, See text, page 30, Ch. IV.

[1] See pages 30-31, Ch. IV for derivation of Quotient scores.

## APPENDIX F

## TABLE 13A-3

## ORGANIZATIONAL PLAN DATA TRENDS: HOMEROOM, PLATOON AND SPECIAL CLASSES SAMPLES[1]

| TEACHER SAMPLES | | | | | | Variable Score Category | PUPIL SAMPLES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP | | Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SU |
| 1 HR | 94.62 | 4.00 | **- | | | Leadership | 1 HR | 31.66 | 5.53 | **+ | | |
| 2 PL | 75.45 | -15.18 | | **- | | | 2 PL | 17.67 | - 8.46 | | **- | |
| 3 SP | 106.93 | 16.30 | | | **+ | | 3 SP | 21.15 | - 4.98 | | | |
| 1 HR | 141.89 | - 6.30 | - | | | Participation | 1 HR | 98.85 | - 1.68 | - | | |
| 2 PL | 152.83 | 4.64 | | | | | 2 PL | 98.90 | - 1.63 | | | |
| 3 SP | 162.43 | 14.24 | | | + | | 3 SP | 110.29 | 9.75 | | | + |
| 1 HR | 82.17 | - 9.13 | **- | | | Assistance | 1 HR | 23.49 | - 3.05 | - | | |
| 2 PL | 93.07 | 1.77 | | | | | 2 PL | 31.41 | 4.87 | | + | |
| 3 SP | 122.21 | 30.91 | | | **+ | | 3 SP | 28.00 | 1.46 | | | |
| 1 HR | 113.64 | -13.21 | **- | | | Mobility | 1 HR | 76.15 | - 6.78 | - | | |
| 2 PL | 127.52 | .66 | | | | | 2 PL | 83.21 | .28 | | | |
| 3 SP | 175.50 | 48.65 | | | **+ | | 3 SP | 108.00 | 25.07 | | | + |
| 1 HR | 4.79 | .38 | -° | | | Restriction° | 1 HR | 8.38 | 1.46 | -° | | |
| 2 PL | 4.40 | - .01 | | | | | 2 PL | 5.14 | - 1.79 | | +° | |
| 3 SP | 3.27 | - 1.13 | | | +° | | 3 SP | 5.20 | - 1.73 | | | |
| 1 Hr | 76.64 | 4.04 | + | | | Lecture,Question and | 1 HR | 72.68 | 6.65 | **+ | | |
| 2 PL | 67.55 | - 5.05 | | - | | Answer,Text,Workbook | 2 PL | 59.07 | - 6.96 | | *- | |
| 3 SP | 67.97 | - 4.82 | | | | Recitation | 3 SP | 55.29 | -10.75 | | | *- |
| 1 HR | 34.00 | - 3.65 | - | | | Problem Solving | 1 HR | 19.30 | .57 | | | |
| 2 PL | 42.24 | 4.60 | | + | | Interpretation | 2 PL | 20.04 | 1.30 | | + | |
| 3 SP | 41.93 | 4.28 | | | | | 3 SP | 14.00 | - 4.74 | | | - |
| 1 HR | 29.77 | - 4.72 | **- | | | Demonstration | 1 HR | 26.70 | - 3.19 | - | | |
| 2 PL | 41.00 | 6.51 | | **+ | | Manipulation | 2 PL | 31.97 | 2.08 | | | |
| 3 SP | 38.86 | 4.37 | | | | Illustration | 3 SP | 38.23 | 8.35 | | | + |
| 1 HR | 79.21 | - 7.81 | **- | | | Supplemental | 1 HR | 39.23 | - 2.66 | - | | |
| 2 PL | 83.90 | - 3.12 | | *- | | Enriched | 2 PL | 40.24 | - 1.64 | | | |
| 3 SP | 123.07 | 36.05 | | | **+ | Individualized | 3 SP | 55.36 | 13.47 | | | + |
| 1 HR | 3.13 | - .26 | - | | | Aural-Oral | 1 HR | 3.11 | - .04 | | | |
| 2 PL | 4.08 | .69 | | + | | | 2 PL | 3.82 | .68 | | + | |
| 3 SP | 3.33 | - .06 | | | | | 3 SP | 2.29 | - .86 | | | - |
| 1 HR | 9.74 | - .57 | | | | Visual | 1 HR | 9.29 | .20 | | | |
| 2 PL | 11.66 | 1.35 | | + | | | 2 PL | 8.43 | - .66 | | - | |
| 3 SP | 9.64 | - .66 | | | - | | 3 SP | 9.69 | .61 | | | + |

See Next Page for Remainder of Table

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[1] See Footnote, Table 10A-1 for levels of significant differences among group means.

+=Highest scoring group mean;-=Lowest scoring group mean.

**-Significant differences at the .01 level;*=Significant differences at the .05 level

°Symbol inversely interpreted in negative value categories;see text,page 30,Ch.IV.

## APPENDIX F

### TABLE 13A-3 (continued)

### ORGANIZATIONAL PLAN DATA TRENDS: HOMEROOM, PLATOON AND SPECIAL CLASSES SAMPLES[1]

| TEACHER SAMPLES | | | | | | Variable Score Category | PUPIL SAMPLES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP | | Group | Group Mean | Main Trend | 1 HR | 2 PL | 3 SP |
| 1 HR | 4.08 | - .45 | - | | | Kinesthetic/ Tactile | 1 HR | 4.38 | - .01 | | | |
| 2 PL | 5.21 | .69 | | + | | | 2 PL | 3.85 | - .54 | | - | |
| 3 SP | 4.85 | .32 | | | | | 3 SP | 5.58 | 1.20 | | | + |
| 1 HR | 10.74 | - .41 | | | | Uses of Materials | 1 HR | 9.96 | .39 | | | |
| 2 PL | 12.45 | 1.30 | | + | | | 2 PL | 8.52 | - 1.05 | | - | |
| 3 SP | 10.00 | - 1.15 | | | - | | 3 SP | 10.31 | .74 | | | + |
| 1 HR | 136.28 | - 5.73 | *- | | | Positive Verbal | 1 HR | 32.36 | - .40 | | | |
| 2 PL | 124.52 | - 7.49 | | *- | | | 2 PL | 31.24 | - 1.52 | | - | |
| 3 SP | 179.21 | 37.20 | | | **+ | | 3 SP | 37.77 | 5.01 | | | + |
| 1 HR | 30.43 | 1.30 | -° | | | Negative Verbal° | 1 HR | 4.57 | - .15 | | | |
| 2 PL | 29.79 | .66 | | | | | 2 PL | 3.94 | - .77 | | +° | |
| 3 SP | 22.62 | - 6.52 | | | +° | | 3 SP | 6.36 | 1.65 | | | -° |
| 1 HR | 59.82 | - 2.49 | - | | | Positive Physical | 1 HR | 42.60 | 1.25 | + | | |
| 2 PL | 60.52 | - 1.81 | | | | | 2 PL | 39.03 | - 2.32 | | - | |
| 3 SP | 75.50 | 13.18 | | | + | | 3 SP | 41.43 | .07 | | | |
| 1 HR | 8.00 | .25 | | | | Negative Physical° | 1 HR | 3.24 | .42 | | | |
| 2 PL | 8.15 | .40 | | -° | | | 2 PL | 4.00 | 1.19 | | -° | |
| 3 SP | 5.63 | - 2.13 | | | +° | | 3 SP | 1.73 | - 1.09 | | | +° |
| 1 HR | 36.21 | - .24 | | | | Positive Covert | 1 HR | 19.94 | - 1.06 | - | | |
| 2 PL | 33.41 | - 3.03 | | - | | | 2 PL | 21.00 | .00 | | | |
| 3 SP | 43.64 | 7.19 | | | + | | 3 SP | 25.00 | 4.00 | | | + |
| 1 HR | 8.00 | .77 | -° | | | Negative Covert° | 1 HR | 2.55 | .21 | | | |
| 2 PL | 6.30 | - .93 | | | | | 2 PL | 1.33 | - 1.00 | | +° | |
| 3 SP | 5.83 | - 1.40 | | | +° | | 3 SP | 3.25 | .92 | | | -° |
| 1 HR | 3.41 | - .11 | | | | Punitive-Disruptive° | 1 HR | 4.36 | - .14 | | | |
| 2 PL | 4.56 | 1.04 | | -° | | | 2 PL | 3.77 | - .73 | | +° | |
| 3 SP | 2.42 | - 1.11 | | | +° | | 3 SP | 6.15 | 1.65 | | | -° |
| 1 HR | 856.42 | -50.30 | *- | | | Quotient Scores | 1 HR | 484.04 | - 9.24 | - | | |
| 2 PL | 888.72 | -17.99 | | *- | | | 2 PL | 486.31 | - 6.97 | | | |
| 3 SP | 1134.43 | 227.71 | | | **+ | | 3 SP | 542.71 | 49.43 | | | + |

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[1] See Footnote, Table 10A-1 for levels of significant differences between samples.
+=Highest scoring group mean; -= Lowest scoring group mean.
**=Significant differences at the .01 level;*=significant differences at the .05
°Symbol inversely interpreted in negative value categories;See text,page 30,Ch.IV.

## APPENDIX F

## TABLE 13A-4

## ORGANIZATIONAL PLAN DATA TRENDS: GRADED AND UNGRADED CLASSES SAMPLES[1]

| TEACHER SAMPLES | | | | | Variable Score Category | PUPIL SAMPLES | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Group | Group Mean | Main Trend | 1 GR | 2 UG | | Group | Group Mean | Main Trend | 1 GR | 2 UG |
| 1 GR | 90.04- | .59 | - | | Leadership | 1 GR | 26.41 | .28 | + | |
| 2 UG | 93.17 | 2.54 | | + | | 2 UG | 24.88- | 1.25 | | - |
| 1 GR | 148.08- | .11 | - | | Participation | 1 GR | 100.01- | .52 | - | |
| 2 UG | 148.67 | .48 | | + | | 2 UG | 102.78 | 2.25 | | + |
| 1 GR | 87.36- | 3.94 | - | | Assistance | 1 GR | 26.69 | .15 | + | |
| 2 UG | 108.39 | 17.09 | | + | | 2 UG | 25.89- | .65 | | - |
| 1 GR | 119.82- | 7.03 | -* | | Mobility | 1 GR | 78.76- | 4.17 | - | |
| 2 UG | 157.33 | 30.48 | | +* | | 2 UG | 101.00 | 18.07 | | + |
| 1 GR | 4.70 | .29 | -° | | Restriction° | 1 GR | 7.34 | .41 | -° | |
| 2 UG | 3.36- | 1.05 | | +° | | 2 UG | 4.92- | 2.01 | | +° |
| 1 GR | 74.76 | 2.15 | + | | Lecture,Question and | 1 GR | 67.76 | 1.73 | + | |
| 2 UG | 63.28- | 9.33 | | - | Answer,Text,Workbook,<br>Recitation | 2 UG | 58.56- | 7.48 | | - |
| 1 GR | 37.41- | .24 | - | | Problem Solving | 1 GR | 19.99 | 1.25 | + | |
| 2 UG | 38.67 | 1.02 | | + | Interpretation | 2 UG | 13.39- | 5.35 | | - |
| 1 GR | 33.72- | .77 | - | | Demonstration<br>Manipulation | 1 GR | 28.17- | 1.72 | - | |
| 2 UG | 37.83 | 3.34 | | + | Illustration | 2 UG | 37.76 | 7.88 | | + |
| 1 GR | 82.09- | 4.93 | -* | | Supplemental<br>Enriched | 1 GR | 39.73- | 2.15 | - | |
| 2 UG | 108.39 | 21.37 | | +* | Individualized | 2 UG | 51.22 | 9.34 | | + |
| 1 GR | 3.50 | .11 | + | | Aural-Oral | 1 GR | 3.28 | .13 | + | |
| 2 UG | 2.67- | .72 | | - | | 2 UG | 2.44- | .70 | | - |
| 1 GR | 10.35 | .04 | + | | Visual | 1 GR | 8.95- | .14 | - | |
| 2 UG | 10.11- | .19 | | - | | 2 UG | 9.71 | .62 | | + |
| 1 GR | 4.49- | .03 | - | | Kinesthetic/ | 1 GR | 4.21- | .18 | - | |
| 2 UG | 4.65 | .13 | | + | Tactile | 2 UG | 5.19 | .80 | | + |
| 1 GR | 11.32 | .17 | + | | Uses of | 1 GR | 9.40- | .17 | - | |
| 2 UG | 10.39- | .76 | | - | Materials | 2 UG | 10.35 | .78 | | + |
| 1 GR | 135.62- | 6.40 | -* | | Positive Verbal | 1 GR | 33.03 | .27 | + | |
| 2 UG | 169.72 | 27.21 | | +* | | 2 UG | 31.53- | 1.23 | | - |
| 1 GR | 31.21 | 2.08 | -° | | Negative Verbal° | 1 GR | 4.36- | .35 | +° | |
| 2 UG | 19.94- | 9.19 | | +° | | 2 UG | 6.08 | 1.37 | | -° |

See Next Page for Remainder of Table

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[1] See Footnote, Table 11A-1 for level of significant differences between samples.
+=Highest scoring group mean; -=Lowest scoring group mean.
**=Significant differences at the .01 level;*=Significant differences at the .05 level
° Symbol inversely interpreted in negative value categories;See text,page 30,CH.IV.

## APPENDIX F

### TABLE 13A-4 (continued)

### ORGANIZATIONAL PLAN DATA TRENDS: GRADED AND UNGRADED CLASSES SAMPLES[1]

| TEACHER SAMPLES | | | | | Variable Score Category | PUPIL SAMPLES | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Group | Group Mean | Main Trend | 1 GR | 2 UG | | Group | Group Mean | Main Trend | 1 GR | 2 UG |
| 1 GR | 60.12 | - 2.21 | - | | Positive Physical | 1 GR | 42.37 | 1.02 | + | |
| 2 UG | 71.89 | 9.57 | | + | | 2 UG | 36.94 | - 4.41 | | - |
| 1 GR | 8.39 | .64 | -° | | Negative Physical° | 1 GR | 3.38 | .57 | -° | |
| 2 UG | 4.64 | - 3.12 | | +° | | 2 UG | 1.73 | - 1.09 | | +° |
| 1 GR | 35.83 | - .61 | - | | Positive Covert | 1 GR | 20.59 | - .41 | - | |
| 2 UG | 39.11 | 2.66 | | + | | 2 UG | 22.78 | 1.78 | | + |
| 1 GR | 7.50 | .27 | -° | | Negative Covert° | 1 GR | 2.19 | - .15 | +° | |
| 2 UG | 5.14 | - 2.09 | | +° | | 2 UG | 2.80 | .47 | | -° |
| 1 GR | 3.95 | .43 | -*° | | Punitive-Disruptive° | 1 GR | 4.22 | - .28 | +° | |
| 2 UG | 2.21 | - 1.31 | | +*° | | 2 UG | 5.50 | 1.00 | | -° |
| 1 GR | 877.18 | - 29.54 | - | | Quotient Scores | 1 GR | 488.05 | - 5.23 | - | |
| 2 UG | 1034.72 | 128.00 | | + | | 2 UG | 515.94 | 22.66 | | + |

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[1] See Footnote, Table 11A-1 for level of significant differences between samples.
+=Highest scoring group mean; -=Lowest scoring group mean.
*= Significant differences at the .05 level.
° Symbol inversely interpreted in negative value categories; See text,page 30,Ch.IV.

## APPENDIX F

### TABLE 13A-5

### DATA TRENDS FOR TWO GREAT CITIES SCHOOL SAMPLES[1]

| TEACHER SAMPLES | | | | | | Variable Score Category | PUPIL SAMPLES | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| School | F-Ratio | Group Mean | Main Trend | I | II | | School | F-Ratio | Group Mean | Main Trend | I | II |
| I | | 125.14 | 21.64 | + | | Leadership | I | | 13.00 | - 2.69 | - | |
| II | 4.65 | 31.86 | -21.64 | | - | | II | 1.37 | 18.83 | 3.14 | | + |
| I | | 169.86 | 26.93 | +* | | Participation | I | | 105.29 | 9.64 | + | |
| II | 6.47* | 116.00 | -26.93 | | -* | | | 2.06 | 86.00 | - 9.64 | | - |
| I | | 131.14 | 33.43 | + | | Assistance | I | | 37.14 | 9.93 | + | |
| II | 4.25 | 64.29 | -33.43 | | - | | II | 3.56 | 17.29 | - 9.93 | | - |
| I | | 192.57 | 46.36 | + | | Mobility | I | | 109.71 | 27.57 | +* | |
| II | 3.73 | 99.86 | -46.36 | | - | | II | 6.17* | 54.57 | -27.57 | | -* |
| I | | 6.80 | - 1.70 | -° | | Restriction° | I | | 7.33 | 1.78 | -° | |
| II | 1.01 | 2.71 | 2.38 | | +° | | II | .94 | 4.67 | - .89 | | + |
| I | | 72.00 | 3.14 | + | | Lecture, Question and Answer, Text, Workbook, Recitation | I | | 51.00 | - 5.93 | - | |
| II | .23 | 65.71 | - 3.14 | | - | | II | 1.89 | 62.86 | 5.93 | | + |
| I | | 42.14 | 10.21 | +* | | Problem Solving Interpretation | I | | 22.00 | 6.43 | + | |
| II | 14.53** | 21.71 | -10.21 | | -* | | II | 4.21 | 9.14 | - 6.43 | | - |
| I | | 45.86 | 5.93 | + | | Demonstration Manipulation Illustration | I | | 39.71 | 8.07 | + | |
| II | .83 | 34.00 | - 5.93 | | - | | II | 2.40 | 23.57 | - 8.07 | | - |
| I | | 138.57 | 32.36 | + | | Supplemental Enriched Individualized | I | | 51.71 | 11.14 | + | |
| II | 3.06 | 73.86 | -32.36 | | - | | II | 3.56 | 29.43 | -11.14 | | - |
| I | | 2.00 | | - | | Aural-Oral | I | | 4.00 | | + | |
| II | | 4.00 | | | + | | II | | 2.86 | | | - |
| I | | 12.57 | .86 | + | | Visual | I | | 9.00 | .43 | + | |
| II | .37 | 10.86 | - .86 | | - | | II | .16 | 8.14 | - .43 | | - |
| I | | 6.29 | .71 | + | | Kinesthetic/ Tactile | I | | 5.43 | .50 | + | |
| II | .58 | 4.86 | - .71 | | - | | II | .71 | 4.43 | - .50 | | - |
| I | | 12.71 | .71 | + | | Uses of Materials | I | | 9.14 | - .14 | - | |
| II | .29 | 11.29 | - .71 | | - | | II | .02 | 9.43 | .14 | | + |
| I | | 168.00 | 17.17 | + | | Positive Verbal | I | | 36.00 | 6.71 | + | |
| II | .76 | 132.57 | -17.17 | | - | | II | 4.28 | 22.57 | - 6.71 | | - |
| I | | 18.71 | - 5.79 | +° | | Negative Verbal° | I | | 3.00 | - .90 | +° | |
| II | .65 | 30.29 | 5.79 | | -° | | II | .70 | 4.80 | .90 | | -° |
| I | | 98.71 | 21.21 | + | | Positive Physical | I | | 46.14 | 4.21 | + | |
| II | 2.89 | 56.29 | -21.21 | | - | | II | .50 | 37.71 | - 4.21 | | - |
| I | | 7.00 | 1.38 | -° | | Negative Physical° | I | | 3.00 | .86 | -° | |
| II | .37 | 5.17 | - .46 | | +° | | II | 2.45 | 1.00 | - 1.14 | | +° |
| I | | 55.86 | 12.12 | + | | Positive Covert | I | | 23.43 | 1.64 | + | |
| II | 3.75 | 31.43 | -12.12 | | - | | II | .25 | 20.14 | - 1.64 | | - |
| I | | 9.50 | 2.86 | -° | | Negative Covert° | I | | 1.00 | | +° | |
| II | 3.32 | 5.67 | - .96 | | + | | II | | 2.25 | | | -° |
| I | | 1.60 | - 2.04 | +* | | Punitive-Disruptive° | I | | 4.80 | .62 | -° | |
| II | 8.44* | 5.33 | 1.70 | | -*° | | II | .15 | 3.67 | - .52 | | +° |
| I | | 1225.00 | 251.93 | + | | Quotient Scores | I | | 543.00 | 80.29 | + | |
| II | 4.66 | 751.14 | -251.93 | | - | | II | 4.04 | 382.43 | -80.29 | | - |

[1] $F_{(1/12,.01)}$=9.33**; $F_{(1/12,.05)}$=4.75* df 12. t(.ol)=3.06**; t(.05)= 2.18*

°Symbol inversely interpreted in negative value categories;See text,page 30,Ch.IV.

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